IT Professional Technical Services
Master Contract

Statement of Work (SOW)
For Technology Services
Issued by

**Minnesota Department of Transportation (Mn/DOT)**

Project Title:	Rail Grade Crossing Improvement Program (RGCIP) Enhancements
Service Categories:	Web Applications Specialist – Java/JSP/Servlets Database – Oracle Database Design/Architect Analyst – Business

1. **Business Need**

Mn/DOT's Office of Freight and Commercial Vehicle Services (OFCVO) has decided to modify the Rail Grade Crossing Improvement Program (RGCIP) application. The current system, RGCIP was developed over the past couple of years and went into production in May 2007. Since that time, business users have identified at least 34 required changes (ranging from minor "tweaks" or changes to full blown enhancements). This effort will address the enhancements in three phases. After completion of the Phase I enhancements (which includes Phase II analysis work) identified in this SOW, Mn/DOT may elect to amend the contract to include additional enhancements or the Mn/DOT may elect to re-advertise for the additional enhancements. The primary goal of this project is to analyze, develop and implement changes to RGCIP so that it is more user friendly, has improved screen navigation, has improved performance, and executes reports more quickly.

1.1 The business and functional need is to:
　　1.1.1 Improve RGCIP performance
　　1.1.2 Increase RGCIP user satisfaction
　　1.1.3 Improve usability of RGCIP
　　1.1.4 Provide a system that more closely aligns with rail office business rules and business requirements
　　1.1.5 Enhance staff productivity by 10%
　　1.1.6 Eliminate maintenance, support and use of the legacy RGCIP database (Microsoft (MS) Access)
　　1.1.7 Improve customer service

1.2 The current RGCIP system is an n-tier browser based application that uses the Oracle 10g database management system. RGCIP was developed by a vendor and put into production in May, 2007. It is currently being maintained and minor enhancements are being made through a maintenance contract. The SOW covers a portion of the enhancements needed for RGCIP. Additional enhancements are planned for the future.

1.3 Business Case
　　1.3.1 The intent of the desired solution is to address issues and opportunities to make improvements to the RGCIP application as identified by users, now that it is in production.
　　1.3.2 The focus of this project is to perform analysis, design, development and implementation of improvements to the RGCIP application and database. This includes the migration of project data from the legacy MS Access system to RGCIP and defining necessary changes to current business processes.
　　1.3.3 The project stakeholders are:
　　　　1.3.3.1 Mn/DOT OFCVO staff
　　　　1.3.3.2 Railroads operating in Minnesota
　　　　1.3.3.3 City and county staff

        1.3.3.4 Mn/DOT district staff

        1.3.3.5 Mn/DOT Transportation Data and Analysis (TDA) staff

        1.3.3.6 General Public

        1.3.3.7 Mn/DOT Geographic Information System (GIS) staff

1.3.4   The following constraints have been identified for this project:

        1.3.4.1 The current RGCIP application must continue in production while this project is implemented.

        1.3.4.2 Project must aid Mn/DOT in conforming to the Minnesota Government Data Practices Act.

        1.3.4.3 Application must conform to Mn/DOT Office of Communication web interface guidelines.

        1.3.4.4 Application must conform to Mn/DOT Office of Information & Technology Services technical architecture standards.

1.3.5   Mn/DOT requests proposals to analyze, design, build, test and deploy enhancements to RGCIP. This time and materials contract will cover the first two phases of a multi-phased project (Figure 1). At the end of Phase I, Mn/DOT will evaluate the performance of the Selected Responder as well as the Selected Responder's revised estimate for Phase 2. Mn/DOT reserves the right to amend the initial contract to cover subsequent phases, but neither guarantees nor implies that the subsequent phases will be awarded to the Selected Responder of this project.

Figure 1
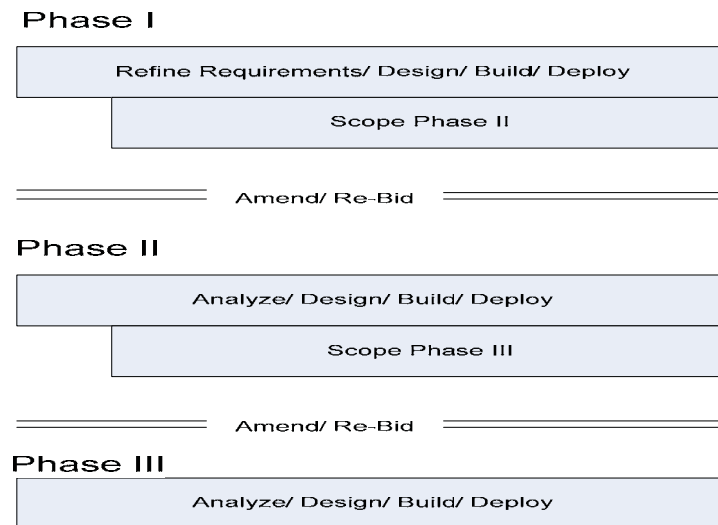
1.4   This project supports Mn/DOT's key focus area of, "Make Mn/DOT Operate Better – Strengthen Program and Finance Integrity." It contributes to Minnesota's efforts to implement e-government by enabling OFCVO access to data that they can share with the general public. In addition, this initiative is aligned with Mn/DOT's Strategic Vision of, "Safety - Promote and maintain a safe, reliable and modern transportation system."

1.5   Responder Required Work Location - The Selected Responder is not required to perform all contract work on site at Mn/DOT. However, the Selected Responder's project team must be available to meet with Mn/DOT on site with 48 hours notice.

2. Project Duties and Deliverables

2.1   The Selected Responder will complete the following project duties:

    2.1.1   Follow all technical specifications and processes identified in this SOW.

    2.1.2   Due to the extensive requirements, assign one or more person(s) to satisfy this SOW.

2.1.3   Maintain sufficient resources (staff) to stay on schedule and support change management incidents. Change management staff should be available for potential meetings with Mn/DOT staff.

2.1.4   Provide training and knowledge transfer to key Mn/DOT staff as specified in this SOW.

2.1.5   Adhere to Mn/DOT's testing and acceptance criteria.

2.1.6   Submit a best practice work plan/schedule, and estimated durations to complete each deliverable with response. In-depth discussion of work plans may occur at contract negotiations. Mn/DOT OFCVO staff will be available to meet with Selected Responder on average, no more than one day a week. The time frame for project execution could stretch out based on business availability.

2.1.7   Report all work plans and completed requirements to the Mn/DOT Project Manager.

2.1.8   Perform unit, integration, regression, and system testing.

2.1.9   Thoroughly test and track all defects using JIRA bug tracking software.

2.1.10   Review all modified Java code with PMD Java code review tool.

2.1.11   Provide a one year warranty against defects, and correct any defects found within the warranty period.

2.2   The Selected Responder will provide the project deliverables detailed in this section.

    2.2.1   Desired system enhancements for Phase I (Exhibit A):

        2.2.1.1 E-1 – Change Perspective from Projects to Agreements

        2.2.1.2 E-2 – Improve Initiate Project Screen

        2.2.1.3 E-9.24 – Clarify the use of terms on screens

        2.2.1.4 E-12 – Signal in Service Date

        2.2.1.5 E-15 – Add Data Element – Authorized Stop Signs and Exempt Orders

        2.2.1.6 E-17 – Add Data Element – Date Crossing Was Closed

        2.2.1.7 E-42 – Re-develop Project History page

        2.2.1.8 E-70 – Remove the interface with the Program and Project Management System (PPMS)

    2.2.2   RGCIP Data Model (Exhibit B)

    2.2.3   Software Development Environment for Java Servlets (Exhibit C)

    2.2.4   Prioritized list of all RGCIP enhancements - Phases I-III (Exhibit D)

    2.2.5   Specific deliverables required: (All deliverables are subject to Mn/DOT approval.)

        2.2.5.1 Phase I - Project Management

            2.2.5.1.1   Provide a written detailed project plan that identifies project resources and a detailed project schedule (preferably in Microsoft Project). The plan should follow an incremental, iterative development methodology. The plan should include a detailed scope and work breakdown structure for each phase and iteration.

            2.2.5.1.2   Provide written monthly high-level status reports to the Mn/DOT Project Manager and OFCVO.

            2.2.5.1.3   Provide weekly status reports, in a format acceptable to the Mn/DOT Project Manager and OFCVO, detailing the status of tasks, deliverables and issues throughout the life of the project.

            2.2.5.1.4   Meet with Mn/DOT Project Manager weekly (or as requested by the Mn/DOT Project Manager) to report on project progress, issues, and planned work.

        2.2.5.2 Phase I - Analysis

            2.2.5.2.1   Work with functional and business experts to develop detailed application requirements, data model, and supplemental requirements.

            2.2.5.2.2   Review Exhibit A, Enhancement Documents and work with functional and business experts to perform analysis for each of the Phase I enhancements.

            2.2.5.2.3   For the Phase I enhancements that have no detailed supporting documentation, the Selected Responder will be expected to work with Mn/DOT staff to detail the requirements such as: database impacts, screen/

form changes, system interface changes, report changes, business process changes, etc.

2.2.5.2.4   Identify changes and impacts to business rules.

2.2.5.2.5   Collaborate with Mn/DOT staff in project risk management.

2.2.5.2.6   Conduct Minnesota Government Data Practices Act (MGDPA) review with the Mn/DOT MGDPA coordinator and project manager and revise deliverables and work plan to incorporate comments.

2.2.5.2.7   Conduct review of project with Mn/DOT Office of Finance and Office of Communications staff and incorporate appropriate changes into the project deliverables.

2.2.5.3 Phase I - Quality Assurance (QA)

2.2.5.3.1   Develop a project QA Plan that details the QA tasks that will be applied to the analysis phase of the project. A QA plan template will be provided by Mn/DOT.

2.2.5.3.2   Conduct reviews of analysis deliverables with Mn/DOT experts.

2.2.5.4 Phase I – Design

2.2.5.4.1   Update the system database design (diagram) showing tables, relationships, and attribute changes needed to the database.

2.2.5.4.2   Update the system meta-data dictionary of all entities/ tables and attributes/ columns including definitions in business language.

2.2.5.4.3   Update the screen-table mapping document and show any changes to the mapping of data elements to application screens and reports.

2.2.5.4.4   Develop prototype user interface screens for new or modified features.

2.2.5.4.5   Conduct design reviews with Mn/DOT experts.

2.2.5.4.6   Present system design changes to Mn/DOT application system architect, report developer, and database administrator (DBA) for review and approval.

2.2.5.4.7   Develop sequence diagrams showing the proposed design for the more complex enhancements.

2.2.5.5 Phase I - Construction

2.2.5.5.1   Provide and maintain application source files, configuration files, developer documentation, and related artifacts in Mn/DOT's Concurrent Versioning System (CVS).

2.2.5.5.2   Provide database scripts.

2.2.5.5.3   Code, test, debug, document, and implement the application using the business rules and specifications to enhance the RGCIP application according to the approved design and technical models.

2.2.5.5.4   Document the application classes using Java doc tags.

2.2.5.5.5   Implement Oracle tables according to approved design and technical models.

2.2.5.5.6   Review all modified Java code with PMD Java code review tool. Developers must run PMD at the end of each project iteration. Developers must examine and fix all level 1 and level 2 violations, or explain why they should not be fixed. Deliver a PMD report in MS Excel format to the Mn/DOT Project Manager at the end of each iteration. This report should be void of level 1 and level 2 violations, or an explanation should be written as to why the violation should be ignored.

2.2.5.6 Phase I - Testing

2.2.5.6.1   Perform unit, integration, regression and system testing and document the results.

2.2.5.6.2   Document, modify and re-test the system problems identified during the testing process.

2.2.5.6.3   Provide monthly defect reports to Mn/DOT's Project Manager.

2.2.5.6.4   Provide weekly defect reports to Mn/DOT's Test Manager.

2.2.5.6.5   Document and maintain status of system defects, change requests, and related artifacts in JIRA.

2.2.5.6.6   Collaborate with Mn/DOT staff in the development and maintenance of: detailed test plan, test inventory, detailed test cases, defect reports, test logs, and regression test reports.

2.2.5.7 Phase I - Iteration-Specific Deliverables

2.2.5.7.1   An updated project schedule to show scope and schedule of tasks for the iteration.

2.2.5.7.2   Refined prototype screens.

2.2.5.7.3   Business test scenarios and system test cases to be executed for each iteration.

2.2.5.7.4   Updated data dictionary and database diagram for the Oracle database.

2.2.5.7.5   Updated application installed in the system test environment prior to acceptance testing.

2.2.5.7.6   Report of defects identified/fixed during the Selected Responder's system testing for each iteration.

2.2.5.7.7   Coordinate iteration design with Mn/DOT report developer.

2.2.5.8 Phase I - Implementation & Training

2.2.5.8.1   Develop and implement application deployment plan that does not adversely affect other Mn/DOT systems.

2.2.5.8.2   Train/mentor Mn/DOT staff to support the modified system.

2.2.5.8.3   Support deployment of the system into production.

2.2.5.8.4   Provide Ant or Maven build script that builds the project without any integrated development environment (IDE) dependencies.

2.2.5.8.5   Provide release notes and installation guide.

2.2.5.8.6   Provide Mn/DOT with a transfer of knowledge of software for future maintenance.

2.2.5.9 Phase I - Maintenance

2.2.5.9.1   Develop information technology (IT) support documentation that includes: technical architecture, database and application design, installation procedures and other information required to support the application.

2.2.5.9.2   Provide scripts to build, test and deploy the application (including database objects).

2.2.5.9.3   Provide any updates to documentation required by new features or enhancements.

2.2.5.9.4   Maintain any non-standard software infrastructure required by the application (custom components) for the development, system test, and production environments.

2.2.5.10 Warranty

2.2.5.10.1 Provide a one year written product warranty. The warranty period begins upon final project signoff.

2.2.5.10.2 Any software errors or defects found during the warranty period will be fixed free of charge by the Selected Responder.

2.2.5.11 Phase II - Scoping

2.2.5.11.1 Provide a high level work plan for Phase II. Include: work breakdown structure, estimate of effort, roles, duration and cost.

2.2.5.11.2 Work with functional and business experts to perform analysis for each of the Phase II enhancements. For each of the enhancements include documentation such as: database impacts, screen/ form changes, system interface changes, report changes, business process changes, etc.

2.2.6 The Selected Responder must have working knowledge of Section 508 of the Rehabilitation Act of 1973 as amended and be able to apply the technical standards for the following as needed in the performance of this contract:

2.2.6.1 Subpart B -- Technical Standards
1194.21 Software applications and operating systems.
1194.22 Web-based intranet and internet information and applications.
1194.24 Video and multimedia products.

2.2.6.2 All electronic and information technology procured and/or developed for this contract shall meet applicable accessibility standards as specified above, viewable at http://www.section508.gov - Part 1194.

2.2.7 All products of this contract must be accessible to people with disabilities. Therefore, all reports and deliverables provided in electronic media, including web-based intranet and internet format shall conform to the relevant accessibility standards references. At a minimum, these provisions include:
1194.22 Web-based Intranet and Internet Information and Applications
1194.31 Functional Performance Criteria
1194.41 Information, Documentation and Support

3. Project Milestones and Schedule

3.1 Project start date: Upon execution of Contract or later as negotiated with the Selected Responder.

3.2 Key deliverable dates:

	Deliverable		Due Date
3.2.1	Phase I – Analysis	Iteration 1 Deliverables	4 weeks after start of contract
3.2.2		Iteration 2 Deliverables	2 weeks after completion of Iteration 1
3.2.3	Phase I– Design & Construction	Iteration 3 Deliverables	6 weeks after completion of Iteration 2
3.2.4		Iteration 4 Deliverables	6 weeks after completion of Iteration 3
3.2.5		Iteration 5 Deliverables	6 weeks after completion of Iteration 4
3.2.6	Phase I – Implementation	Iteration 6 Deliverables	6 weeks after completion of Iteration 5
3.2.7	Phase II – Scoping	Iteration 7 Deliverables	6 weeks after completion of Iteration 6
3.2.8	Phase II – Scoping	Iteration 8 Deliverables	6 weeks after completion of Iteration 7

3.3 End date: 42 weeks after start of project

4. Project Environment (Mn/DOT Resources)

4.1 Mn/DOT will provide technical and business resources to assist with the project as follows:

4.1.1 Approximately fifteen IT staff and five business staff to assist with the project, on an "as-needed" basis.

4.1.2 Mn/DOT's Project Manager will be determined. For all inquiries regarding this SOW contact the Mn/DOT Contract Administrator, Melissa McGinnis at 651-366-4644. Contact with any other Mn/DOT personnel regarding this SOW may result in disqualification.

4.1.3 The basic project organizational structure consists of:
- Mn/DOT Project Manager – To be determined
- Mn/DOT Database Administrator – S. Sethi
- Mn/DOT Project Architect – To be determined
- Mn/DOT Test Manager – To be determined
- Mn/DOT Application System Architect – R. Meyer
- Mn/DOT Infrastructure System Architect – M. Kangas
- Mn/DOT GIS System Architect – C. McCarty
- Mn/DOT Crystal Enterprise Report Developer – S. Netland
- Mn/DOT RGCIP Coordinators – D. Peterson, J. Anderson
- Mn/DOT OFCVO Business Experts – T. Spencer, S. Aylesworth, M. Braun, T. Gellerman, G. Dahlke
- Mn/DOT Application Server Administrator – To be determined
- Mn/DOT Crystal Business Objects Administrator – M. Olson
- Mn/DOT JIRA Administrator – J. Lee
- Mn/DOT JAVA Advisor – J. Lee
- Mn/DOT CVS Administrator – L. Dolan
- Mn/DOT MAPS Coordinator – S. Dwight
- Mn/DOT MGDPA Coordinator – B. Forsland
- Mn/DOT PPMS Coordinator – M. O'Reilly
- Mn/DOT TDA/TIS Coordinator – M. Koukol

4.2 Mn/DOT Staff Proficiency Levels and Experience relevant to the project: Mn/DOT OFCVO staff are familiar with the current system and have many years of experience with the business processes used in OFCVO. Mn/DOT Office of Information and Technology Services staff have a high level of experience with the tools and technologies specified for this project.

4.3 The technical infrastructure and support structures currently in place or expected to be in place for this project include:

4.3.1 General

4.3.1.1 Provide a core project team that includes: project sponsor, project manager, project architect, business subject matter experts, key business stakeholders, application system architect, and IT application and database support staff. The team will also include other Mn/DOT IT resources for support of the project technical infrastructure (network, system, security, etc.) and application development support.

4.3.1.2 Provide change management process and change control board members.

4.3.1.3 Manage project scope, cost and schedule.

4.3.1.4 Provide timely resolution to business issues.

4.3.2 Phase I - Analysis

4.3.2.1 Provide a list of enhancements and definitions and supporting documentation.

4.3.2.2 Provide OFCVO and OI&TS GIS expertise.

4.3.2.3 Provide information on current system business rules

4.3.2.4 Provide information on the interfacing external systems.

4.3.2.5 Provide deliverable templates and guidelines.

4.3.2.6 Review and approve financial requirements.

4.3.2.7 Provide MDGPA review.

4.3.3   Phase I - Design

4.3.3.1   Track change requests and issues.

4.3.3.2   Provide screen-table mapping document for the current system showing the mapping of data elements to application screens and reports.

4.3.3.3   Review and approve design and prototype screens.

4.3.3.4   Review and approve all new application code.

4.3.3.5   Review and approve financial component design.

4.3.4   Phase I - Testing

4.3.4.1   Develop acceptance test criteria.

4.3.4.2   Perform and document user acceptance testing.

4.3.4.3   Identify defects and change requests during acceptance testing.

4.3.4.4   Provide on-site test lab facility.

4.3.4.5   Test financial components.

4.3.4.6   Provide PMD Java code review tool.

4.3.5   Phase I - Data

4.3.5.1   Provide information on the current and legacy RGCIP database.

4.3.5.2   Assist in database design and implementation.

4.3.5.3   Provide existing data dictionary (system meta-data dictionary of all entities/ tables and attributes/ columns).

4.3.5.4   Provide Business Experts to perform cleansing of current system data during the data migration process. (Phase II)

4.3.5.5   Convert legacy RGCIP data from MS Access to Oracle tables for migration preparation. (Phase II)

4.3.6   Phase I - Infrastructure

4.3.6.1   Build and maintain the development, system test, and production hardware, operating system, and database infrastructure for the application.

4.3.6.2   Provide database design and development tool access (Oracle/Toad), and application development tool licenses (MyEclipse).

4.3.6.3   Provide all hardware and software licenses for the production environment.

4.3.7   Phase I - Reporting

4.3.7.1   Provide Crystal Enterprise report web page and report publishing.

4.3.7.2   Code, test, and debug reports using Crystal Reports and deploy in a Crystal Enterprise environment.

5. Project Requirements

The Selected Responder will adhere to the following project requirements:

5.1   Compliance with the Statewide Enterprise Architecture.

5.2   Compliance with Statewide Project Management Methodology.

5.3   Compliance with applicable industry/agency standards.

5.4   The RGCIP application is implemented at the Mn/DOT central office network center. It will remain accessible from offices within Mn/DOT through the department wide area network.

5.5   The computer and network hardware will be maintained by Mn/DOT. After the expiration of the system enhancement warranty period, the system will be maintained by Mn/DOT.

5.6   Training of the application administrator in the administration of the modified system.

5.7   The Selected Responder staff will not be required to work on site at Mn/DOT. However, all of the Selected Responder's project team must be able to be on-site for meetings, as requested by Mn/DOT, with 48 hours notice.

5.8   Provide a one year warranty against defects, and correct any defects found within the warranty period.

6. **Required Skills (These are to be rated on a pass/fail basis)**
   Required minimum qualifications are shown in the following table. The proposal must specifically indicate how members of the Responders team meet these minimum qualifications. This portion of the proposal review will be conducted on a pass/fail basis. If Mn/DOT determines, in its sole discretion, that the Responder fails to meet one or more of these requirements (or that the Responder has not submitted sufficient information to make the pass/fail determination), then the proposal will be eliminated from further review.

	Master Contract Resource Type/Categories	Minimum Number of Years Experience	Required Skill Type
6.1	Web Applications Specialist	3	Demonstrated ability to design, develop, and debug complex applications using Java 1.4. Provide a description of at least 3 applications developed.
6.2	Database	3	Use of Oracle 10g database management system
6.3	Web Applications Specialist	3	Deployment of applications using JBoss Application Server
6.4	Application (Design & Development)	2	Use of Eclipse IDE
6.5	Web Applications Specialist	3	Development using Java/JSP/Servlets
6.6	Web Applications Specialist	3	JAVA EE Development
6.7	Web Applications Specialist	2	Development using STRUTS – controller framework
6.8	Web Applications Specialist	2	Development using HIBERNATE – object relational mapping
6.9	Database Design/Architect	3	Database Design
6.10	Analyst - Business	3	Systems Analysis

7. **Desired Skills**
   Mn/DOT desires a project team with the skills shown in the table below. The extent to which the Responder meets or exceeds the desired skills will be included as part of the qualitative evaluation of the proposal.

	Master Contract Resource Type/Categories	Desired Skill Type
7.1	Analyst - Business	Strong communication, analytical and problem solving skills.
7.2	Application (Design & Development)	Development using VELOCITY – presentation framework
7.3	Project Management	Project Management Professional (PMP) Certification from Project Management Institute (PMI)
7.4	Database	Structured Query Language (SQL) & PL SQL
7.5	Application (Design & Development)	Form and Report Prototyping
7.6	Application (Design & Development)	Testing methods and developing test cases
7.7	Application (Design & Development)	Use of CVS Configuration Management System
7.8	Application (Design & Development)	Object Oriented Analysis and Design Techniques
7.9	Application (Design & Development	Object-oriented design patterns
7.10	Application (Design & Development)	Use of JIRA defect tracking software
7.11	Application (Design & Development)	Defect determination and tracking
7.12	Application (Design & Development)	User Interface Design
7.13	Application (Design & Development)	Experience using the Spring Framework
7.14	Analyst - Business	Developing work estimates
7.15	Application (Design & Development)	Developing release documentation
7.16	Application (Design & Development)	Software Quality Assurance methods
7.17	Application (Design & Development)	Use of PMD Java code review tool

7.18	Analyst - Business	Unified Modeling Language (UML)
7.19	Application (Design & Development)	Test Design
7.20	Application (Design & Development)	Test Management

8. **Process Schedule**

8.1	Deadline for Questions	02/17/2010 2:00 PM Central Standard Time
8.2	Posted Response to Questions	02/19/2010 2:00 PM Central Standard Time
8.3	Proposals due	02/25/2010 2:00 PM Central Standard Time
8.4	Anticipated proposal evaluation begins	03/01/2010
8.5	Anticipated proposal evaluation & decision	03/30/2010

9. **Questions**

All questions regarding this SOW must be addressed to the Mn/DOT Contract Administrator listed below. Proposers may not discuss the content of this SOW with other Mn/DOT staff. Any questions regarding this SOW must be received via e-mail by 02/17/2010, 2:00PM Standard Central Time.

Contract Administrator	Melissa McGinnis
Email Address:	melissa.mcginnis@state.mn.us

It is anticipated that questions and answers will be posted on the Office of Enterprise Technology's web site by 02/19/2010, 2:00pm Central Standard Time (www.ot.state.mn.us). Note that questions may be posted verbatim as submitted.

10. **Liability for Work Performed**

The Contractor must indemnify, save, and hold the State and the State's agents and employees harmless from any claims or causes of action, including attorney's fees incurred by the State, arising from the performance of this contract by the Contractor, or the Contractor's agents and employees. This clause will not be construed to bar any legal remedies the Contractor may have for the State's failure to fulfill its obligations under this contract.

The "Standard Liability Clause" (see above) will apply to this project and will be incorporated into the work order issued for this project. No exceptions to, or deviations from, this clause will be permitted. Do not submit a proposal if you cannot accept this liability clause. Proposals which the State determines, in its sole discretion, indicate non-acceptance of this liability clause, will be rejected by the State.

11. **SOW Evaluation Process**

Mn/DOT representatives will evaluate proposals received by the deadline. Proposals will be evaluated on a "Best Value" basis of 70% qualifications and 30% cost considerations. In some instances, an interview may be part of the evaluation process. The review committee will not open the cost proposals until after the qualifications points have been awarded.

The selection process being used for this project involves a two step process. Step one will include the pass/fail assessment and a qualitative evaluation of Contractors' technical proposal. Step Two will be an analysis of the cost proposal.

Mn/DOT will review proposals according to the following criteria:

•	Project understanding, work plan and approach	20%
•	Schedule/ Ability to complete the project on-time	10%
•	Qualifications and experience of personnel to be assigned to this project along with the extent to which the Desired Skills are met	15%
•	Qualifications and experience of firm	15%
•	Cost	30%
•	Extent to which services will be performed within the U.S.	10%

Mn/DOT reserves the right to check references and to review previous performance reviews for work performed for Mn/DOT or other state agencies, and to take such references and reviews into account for consultant selection purposes.

The following contains additional information describing the proposal evaluation process:

Step One

In step one the proposals will first be reviewed to verify whether the proposer meets the "Required Skills" (see section six). Proposals receiving a "fail" on one or more of the required skills will not be reviewed further. Proposals which pass the Required Skills review will then be scored on the non-cost and non-interview factors listed above.

Step Two

Cost proposal will be evaluated and scored in accordance with the percentage listed above. Cost will not be revealed to selection committee members until after the technical scoring has been completed.

12. Response Requirements
   12.1 Introduction.
   12.2 Company overview. Including responder's company name, business address, the contact person's name, telephone number, fax number and email address (as available).
   12.3 Project overview.
   12.4 Detailed response to "Mn/DOT Project Requirements".
      12.4.1 Description of the responder's understanding of the need and explanation of their proposed solution. Clearly identify that you fully understand the requirements of this project.
      12.4.2 Explain how the project will meet the requirements. Identify your ability to comply with Mn/DOT's development environment. Cleary identify your company's warranty for the work performed.
   12.5 Detailed response to "Project Approach".
      Explain how the responder will approach their participation in the project. This includes:
      12.5.1 Organization and staffing. Include staff qualifications in the chart below, along with a resume that will allow Mn/DOT to easily determine if assigned key staff meet the required skills and the extent to which assigned staff meet or exceed the desired skills. The resumes must clearly identify the skills and experience that are detailed in the chart. Project references for work completed for government agencies are preferred. No change in personnel assigned to the project will be permitted without the written approval of Mn/DOT's Project Manager.

Required Skill type	Personnel/ Years of Experience	Project(s) worked on demonstrating these skills	Reference (name, company, phone number)

      12.5.2 A detailed work-plan, including a realistic plan to meet the project target completion date and accommodate the limited availability of Mn/DOT OFCVO staff. The work plan includes a timeline and identifies major tasks for the analysis, development, construction, testing, debugging, documenting and deployment of the system. The work plan must present the responder's approach, work breakdown, deliverable milestones, dates, and a staffing plan to deliver the project results
      12.5.3 Contract/change management procedures.
      12.5.4 Project management (e.g. quality management, risk assessment/management, etc.).
      12.5.5 Documentation of progress such as status reports.
      12.5.6 Description of the deliverables to be provided by the responder.
   12.6 The forms and documents required under any other section of this Statement of Work

12.7 References: Provide three clients for similar type projects.

12.8 Submit a cost proposal in a separate sealed envelope. Rates proposed may not exceed the rates approved under this program. Cost proposal must include the number of anticipated hours, classifications of personnel, personnel hourly rates and a total project cost. If direct expenses are anticipated they must be detailed in the cost proposal.

12.9 Required forms to be returned or additional provisions that must be included in proposal

12.9.1 **Location of Service Disclosure Form.**

12.9.2 **Conflict of Interest Form**

Proposer must provide a list of all entities with which it has relationships that create, or appear to create, a conflict of interest with the work that is contemplated in this request for proposals. The list should indicate the name of the entity, the relationship, and a discussion of the conflict.

The proposer warrants that, to the best of its knowledge and belief, and except as otherwise disclosed, there are no relevant facts or circumstances which could give rise to organizational conflicts of interest. An organizational conflict of interest exists when, because of existing or planned activities or because of relationships with other persons, a proposer is unable or potentially unable to render impartial assistance or advice to Mn/DOT, or the proposer's objectivity in performing the contract work is or might be otherwise impaired, or the proposer has an unfair competitive advantage. The proposer agrees that, if after award, an organizational conflict of interest is discovered, an immediate and full disclosure in writing must be made to Mn/DOT which must include a description of the action which the proposer has taken or proposes to take to avoid or mitigate such conflicts. If an organization conflict of interest is determined to exist, Mn/DOT may, at its discretion, cancel the contract. In the event the proposer was aware of an organizational conflict of interest prior to the award of the contract and did not disclose the conflict to Mn/DOT, Mn/DOT may terminate the contract for default. The provisions of this clause must be included in all subcontracts for work to be performed similar to the service provided by the prime contractor, and the terms "contract," "contractor," and "contracting officer" modified appropriately to preserve Mn/DOT's rights. Proposers must complete the attached "Conflict of Interest Checklist and Disclosure Form" and submit it along with the response, but not as a part of the response.

12.9.3 **Affidavit of non-collusion**

Proposers must complete the attached "Affidavit of Noncollusion" and include it with the response. The successful proposer will be required to submit acceptable evidence of compliance with workers' compensation insurance coverage requirements prior to execution of the Contract.

12.9.4 **Immigration Status Certification Form**

For all Contracts estimated to be in excess of $50,000.00, responders are required to complete the attached "Immigration Status Certification Form" page and include it with the response.

12.9.5 **Certification Regarding Lobbying**

Federal money may be used to pay for all or part of the work under the Contract, therefore the responder must complete the attached Certification Regarding Lobbying and submit is as part of its proposal.

12.9.6 **Affirmative Action Certification**

For all Contracts estimated to be in excess of $100,000.00, responders are required to complete the attached "Affirmative Action Certification" page and include it with the response.

12.9.7 **Veteran-Owned/Service Disabled Veteran-Owned Preference**

In accordance with Laws of Minnesota, 2009, Chapter 101, Article 2, Section 56, eligible certified veteran-owned and eligible certified service-disabled veteran-owned small businesses will receive a 6 percent preference in the evaluation of their proposal.

Eligible veteran-owned and eligible service-disabled veteran-owned small businesses should complete the Veteran-Owned/Service Disabled Veteran-Owned Preference Form in this solicitation, and include the required documentation. Only eligible, certified, veteran-

owned/service disabled small businesses that provide the required documentation, per the form, will be given the preference.

Eligible veteran-owned and eligible service-disabled veteran-owned small businesses must be **currently** certified by the United States Department of Veterans Affairs prior to the solicitation opening date and time to receive the preference.

Information regarding certification by the United States Department of Veterans Affairs may be found at http://www.vetbiz.gov.

13. **Proposal Submission Instructions**
   Submit 7 copies of the response. Responses are to be submitted in a mailing envelope or package, clearly marked "Proposal" on the outside. Cost proposals are to be submitted in a separate sealed envelope. An authorized member of the firm must sign each copy of the response in ink.

   All responses must be sent to:
   Melissa McGinnis, Contract Administrator
   Minnesota Department of Transportation
   395 John Ireland Boulevard
   Consultant Services Section, Mail Stop 680
   St. Paul, Minnesota 55155

   All responses must be received not later than 2:00 p.m. Central Standard Time on Date, as indicated by the time stamp made by the Contract Administrator. **Please note that Mn/DOT Offices have implemented new security measures**. These new procedures do not allow non-Mn/DOT employees to have access to the elevators or the stairs. You should plan enough time and follow these instructions for drop-off:
   - Enter through the Rice Street side of the Central Office building (1st Floor).
   - Once you enter through the doors, you should walk straight ahead to the Information Desk.
   - **Proposals are accepted at the Information Desk only**. The receptionist will call the Contract Administrator to come down and to time stamp the proposal. Please keep in mind Mn/DOT is very strict on the proposal deadline. Proposals will not be accepted after 2:00pm.

14. **General Requirements**
   14.1   Proposal Contents
      By submission of a proposal, Proposer warrants that the information provided is true, correct and reliable for purposes of evaluation for potential award of a work order. The submission of inaccurate or misleading information may be grounds for disqualification from the award as well as subject the proposer to suspension or debarment proceedings and other remedies available by law.

   14.2   Disposition of Responses
      All materials submitted in response to this SOW will become property of the State and will become public record in accordance with Minnesota Statutes, section 13.591, after the evaluation process is completed. Pursuant to the statute, completion of the evaluation process occurs when the government entity has completed negotiating the contract with the selected Proposer. If the Proposer submits information in response to this SOW that it believes to be trade secret materials, as defined by the Minnesota Government Data Practices Act, Minn. Stat. § 13.37, the Proposer must: clearly mark all trade secret materials in its response at the time the response is submitted, include a statement with its response justifying the trade secret designation for each item, and defend any action seeking release of the materials it believes to be trade secret, and indemnify and hold harmless the State, its agents and employees, from any judgments or damages awarded against the State in favor of the party requesting the materials, and any and all costs connected with that defense. This indemnification survives the State's award of a contract. In submitting a response to this RFP, the Proposer agrees that this indemnification survives as long as the trade secret materials are in possession of the State.

Mn/DOT will not consider the prices submitted by the Proposer to be proprietary or trade secret materials.

15. **No State Obligation**

Issuance of this Statement of Work does not obligate Mn/DOT to award a contract or complete the assignment, and Mn/DOT reserves the right to cancel this solicitation if it is considered to be in its best interest. Mn/DOT reserves the right to reject any and all proposals.

16. **Soliciting proposals by Disadvantaged Business Enterprises (DBE)**
Race Gender Neutral Assigned

The Mn/DOT office of Civil Rights has assigned a Race/Gender Neutral Goal to this project. Responders are directed to read the DBE Special Provisions, as posted along with this SOW. The DBE Special Provisions explains how to comply with the DBE requirements. In particular, see pages one and two regarding documents that a responder must submit with its proposal. The form required in the proposal can be found on page 3 of the Special Provisions. To view a listing of certified DBE's, please contact the Mn/DOT Office of Civil Rights at 651-366-3073, TTY 651-282-5799, or visit their website at www.dot.state.mn.us/eeocm.

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STATE OF MINNESOTA
LOCATION OF SERVICE DISCLOSURE AND CERTIFICATION

<u>**LOCATION OF SERVICE DISCLOSURE**</u>

Check all that apply:

☐ The services to be performed under the anticipated contract as specified in our proposal will be performed ENTIRELY within the State of Minnesota

☐ The services to be performed under the anticipated contract as specified in our proposal entail work ENTIRELY within another state within the United States.

☐ The services to be performed under the anticipated contract as specified in our proposal will be performed in part within Minnesota and in part within another state within the United States.

☐ The services to be performed under the anticipated contract as specified in our proposal DO involve work outside the United States. Below (or attached) is a description of:
- The identity of the company (identify if subcontractor) performing services outside the United States;
- The location where services under the contract will be performed; <u>and</u>
- The percentage of work (in dollars) as compared to the whole that will be conducted in each identified foreign location.

<u>**CERTIFICATION**</u>

By signing this statement, I certify that the information provided above is accurate and that the location where services have been indicated to be performed will not change during the course of the contract without prior, written approval from the State of Minnesota.

Name of Company: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

Telephone Number: _____

STATE OF MINNESOTA
AFFIDAVIT OF NONCOLLUSION

I swear (or affirm) under the penalty of perjury:

1.   That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);

2.   That the attached proposal submitted in response to the Statement of Work has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;

3.   That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and

4.   That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder's Firm Name: _____

Authorized Signature: _____

Date:_____

Subscribed and sworn to me this _____ day of _____

_____
Notary Public

                                        My commission expires: _____

CONFLICT OF INTEREST CHECKLIST AND DISCLOSURE FORM

Purpose of this Checklist. This checklist is provided to assist proposers in screening for potential organizational conflicts of interest. The checklist is for the internal use of proposers and does not need to be submitted to Mn/DOT, however, the Disclosure of Potential Conflict of Interest form should be submitted in a separate envelope along with your proposal.

Definition of "Proposer". As used herein, the word "Proposer" includes both the prime contractor and all proposed subcontractors.

Checklist is Not Exclusive. Please note that this checklist serves as a guide only, and that there may be additional potential conflict situations not covered by this checklist. If a proposer determines a potential conflict of interest exists that is not covered by this checklist, that potential conflict must still be disclosed.

Use of the Disclosure Form. A proposer must complete the attached disclosure form and submit it with their Proposal (or separately as directed by Mn/DOT for projects not awarded through a competitive solicitation). If a proposer determines a potential conflict of interest exists, it must disclose the potential conflict to Mn/DOT; however, such a disclosure will not necessarily disqualify a proposer from being awarded a Contract. To avoid any unfair "taint" of the selection process, the disclosure form should be provided separate from the bound proposal, and it will not be provided to selection committee members. Mn/DOT's Contract Management personnel will review the disclosure and the appropriateness of the proposed mitigation measures to determine if the proposer may be awarded the Contract notwithstanding the potential conflict. Mn/DOT's Contract Management personnel may consult with Mn/DOT's Project Manager and Department of Administration personnel. By statute, resolution of conflict of interest issues is ultimately at the sole discretion of the Commissioner of Administration.

Material Representation. The proposer is required to submit the attached disclosure form either declaring, to the best of its knowledge and belief, either that no potential conflict exists, or identifying potential conflicts and proposing remedial measures to ameliorate such conflict. The proposer must also update conflict information if such information changes after the submission of the proposal. Information provided on the form will constitute a material representation as to the award of this Contract. Mn/DOT reserves the right to cancel or amend the resulting Contract if the successful proposer failed to disclose a potential conflict, which it knew or should have known about, or if the proposer provided information on the disclosure form that is materially false or misleading.

Approach to Reviewing Potential Conflicts. Mn/DOT recognizes that proposer's must maintain business relations with other public and private sector entities in order to continue as viable businesses. Mn/DOT will take this reality into account as it evaluates the appropriateness of proposed measures to mitigate potential conflicts. It is not Mn/DOT's intent to disqualify proposers based merely on the existence of a business relationship with another entity, but rather only when such relationship causes a conflict that potentially impairs the proposer's ability to provide objective advice to Mn/DOT. Mn/DOT would seek to disqualify proposers only in those cases where a potential conflict cannot be adequately mitigated. Nevertheless, Mn/DOT must follow statutory guidance on Organizational Conflicts of Interest.

Statutory Guidance. Minnesota Statutes §16C.02, Subdivision 10 (a) places limits on state agencies ability to Contract with entities having an "Organizational Conflict of Interest ". For purposes of this checklist and disclosure requirement, the term "Vendor" includes "Proposer" as defined above. Pursuant to such statute, "Organizational Conflict of Interest" means that because of existing or planned activities or because of relationships with other persons: (1) the vendor is unable or potentially unable to render impartial assistance or advice to the state; (2) the vendor's objectivity in performing the contract work is or might otherwise be impaired; or (3) the vendor has an unfair advantage.

Additional Guidance for Professionals Licensed by the Minnesota Board of Engineering. The Minnesota Board of Engineering has established conflict of interest rules applicable to those professionals licensed by the Board (see Minnesota Rules Part 1805.0300) Subpart 1 of the rule provides "A licensee shall avoid accepting a commission where duty to the client or the public would conflict with the personal interest of the licensee or the interest of another client. Prior to accepting such employment the licensee shall disclose to a prospective client such facts as may give rise to a conflict of interest".

An organizational conflict of interest may exist in any of the following cases:

The proposer, or its principals, own real property in a location where there may be a positive or adverse impact on the value of such property based on the recommendations, designs, appraisals, or other deliverables required by this Contract.

The proposer is providing services to another governmental or private entity and the proposer knows or has reason to believe, that entity's interests are, or may be, adverse to the state's interests with respect to the specific project covered by this contract. **Comment:** the mere existence of a business relationship with another entity would not ordinarily need to be disclosed. Rather, this focuses on the nature of services commissioned by the other entity. For example, it would not be appropriate to propose on a Mn/DOT project if a local government has also retained the proposer for the purpose of persuading Mn/DOT to stop or alter the project plans.

The Contract is for right-of-way acquisition services or related services (e.g. geotechnical exploration) and the proposer has an existing business relationship with a governmental or private entity that owns property to be acquired pursuant to the Contract.

The proposer is providing real estate or design services to a private entity, including but not limited to developers, whom the proposer knows or has good reason to believe, own or are planning to purchase property affected by the project covered by this Contract, when the value or potential uses of such property may be affected by the proposer's performance of work pursuant to this Contract. "Property affected by the project" includes property that is in, adjacent to, or in reasonable proximity to current or potential right-of-way for the project. The value or potential uses of the private entity's property may be affected by the proposer's work pursuant to the Contract when such work involves providing recommendations for right-of-way acquisition, access control, and the design or location of frontage roads and interchanges. **Comment**: this provision does not presume proposers know or have a duty to inquire as to all of the business objectives of their clients. Rather, it seeks the disclosure of information regarding cases where the proposer has reason to believe that its performance of work under this Contract may materially affect the value or viability of a project it is performing for the other entity.

The proposer has a business arrangement with a current Mn/DOT employee or immediate family member of such employee, including promised future employment of such person, or a subcontracting arrangement with such person, when such arrangement is contingent on the proposer being awarded this Contract. This item does not apply to pre-existing employment of current or former Mn/DOT employees, or their immediate family members. **Comment:** this provision is not intended to supercede any Mn/DOT policies applicable to its own employees accepting outside employment. This provision is intended to focus on identifying situations where promises of employment have been made contingent on the outcome of this particular procurement. It is intended to avoid a situation where a proposer may have unfair access to "inside" information.

The proposer has, in previous work for the state, been given access to "data " relevant to this procurement or this project that is classified as "private" or "nonpublic" under the Minnesota Government Data Practices Act, and such data potentially provides the proposer with an unfair advantage in preparing a proposal for this project. **Comment**: this provision will not, for example, necessarily disqualify a proposer who performed some preliminary work from obtaining a final design Contract, especially when the results of such previous work are public data available to all other proposers. Rather, it attempts to avoid an "unfair advantage" when such information cannot be provided to other potential proposers. Definitions of "government data", "public data", "non-public data" and "private data" can be found in Minnesota Statutes Chapter 13.

The proposer has, in previous work for the state, helped create the "ground rules" for this solicitation by performing work such as: writing this solicitation, or preparing evaluation criteria or evaluation guides for this solicitation.

The proposer, or any of its principals, because of any current or planned business arrangement, investment interest, or ownership interest in any other business, may be unable to provide objective advice to the state.

DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST

Having had the opportunity to review the Organizational Conflict of Interest Checklist, the proposer hereby indicates that it has, to the best of its knowledge and belief:

☐ Determined that no potential organizational conflict of interest exists

☐ Determined a potential organizational conflict of interest as follows:

Describe nature of potential conflict:

Describe measures proposed to mitigate the potential conflict:

Signature_____Date_____

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure form with Mn/DOT Contract personnel.

Name_____Phone_____

CERTIFICATION REGARDING LOBBYING
For State of Minnesota Contracts and Grants over $100,000

The undersigned certifies, to the best of his or her knowledge and belief that:

(1)   No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2)   If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, A Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned will complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying in accordance with its instructions.

(3)   The undersigned will require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans and cooperative agreements) and that all subrecipients will certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification will be subject to a civil penalty of not less than $10,000.00 and not more than $100,000.00 for each such failure.

_____

Organization Name

_____

Name and Title of Official Signing for Organization

By: _____

       Signature of Official

_____

Date

State of Minnesota — Immigration Status Certification

By order of the Governor (Governor's Executive Order 08-01), vendors and subcontractors MUST certify compliance with the Immigration Reform and Control Act of 1986 (8 U.S.C. 1101 et seq.) and certify use of the *E-Verify* system established by the Department of Homeland Security.

E-Verify program information can be found at http://www.dhs.gov/ximgtn/programs

If any response to a solicitation is or could be in excess of $50,000.00, vendors and subcontractors must certify compliance with items 1 and 2 below. In addition, prior to the delivery of the product or initiation of services, vendors MUST obtain this certification from all subcontractors who will participate in the performance of the Contract. All subcontractor certifications must be kept on file with the Contract vendor and made available to the state upon request.

1. The company shown below is in compliance with the Immigration Reform and Control Act of 1986 in relation to all employees performing work in the United States and does not knowingly employ persons in violation of the United States immigration laws. The company shown below will obtain this certification from all subcontractors who will participate in the performance of this Contract and maintain subcontractor certifications for inspection by the state if such inspection is requested; and
2. By the date of the delivery of the product and/or performance of services, the company shown below will have implemented or will be in the process of implementing the *E-Verify* program for all newly hired employees in the United States who will perform work on behalf of the State of Minnesota.

I certify that the company shown below is in compliance with items 1 and 2 above and that I am authorized to sign on its behalf.

Name of Company: _____   Date: _____

Authorized Signature: _____   Telephone Number: _____

Printed Name: _____   Title: _____

If the Contract vendor and/or the subcontractors are not in compliance with the Immigration Reform and Control Act, or knowingly employ persons in violation of the United States immigration laws, or have not begun or implemented the *E-Verify* program for all newly hired employees in support of the Contract, the state reserves the right to determine what action it may take. This action could include, but would not be limited to cancellation of the Contract, and/or suspending or debarring the Contract vendor from state purchasing.

For assistance with the *E-Verify* Program
Contact the National Customer Service Center (NCSC) at **1-800-375-5283** (TTY 1-800-767-1833).

For assistance with this form, contact:
Mail: 112 Administration Building, 50 Sherburne Avenue, St. Paul, Minnesota 55155
E-Mail: MMDHelp.Line@state.mn.us

STATE OF MINNESOTA
VETERAN-OWNED/SERVICE DISABLED VETERAN-OWNED PREFERENCE FORM

In accordance with Laws of Minnesota, 2009, Chapter 101, Article 2, Section 56, eligible certified veteran-owned and eligible certified service-disabled veteran-owned small businesses will receive a 6 percent preference in the evaluation of their proposal.

Eligible veteran-owned and eligible service-disabled veteran-owned small businesses include certified small businesses that are majority-owned and operated by either (check the box that applies and attach the certification documents required with your response to this solicitation):

☐ Recently separated veterans, who are veterans as defined in Minnesota Statutes §197.447, who have served in active military service, at any time on or after September 11, 2001, and who have been discharged under honorable conditions from active service, as indicated by the person's United States Department of Defense form DD-214 or by the commissioner of veterans affairs. Required Documentation:
- Certification by the United States Department of Veterans Affairs as a veteran-owned small business
- Discharge form (DD-214) dated on or after September 11, 2001 with condition honorable

OR

☐ Veterans who are veterans as defined in Minnesota Statutes §197.447, with service-connected disabilities, as determined at any time by the United States Department of Veterans Affairs. Required Documentation:
- Certification by the United States Department of Veterans Affairs as a service-disabled veteran-owned small business.

Eligible veteran-owned and eligible service-disabled veteran-owned small businesses must be **currently** certified by the Unites States Department of Veterans Affairs prior to the solicitation opening date and time to receive the preference.

Information regarding certification by the United States Department of Veterans Affairs may be found at http://www.vetbiz.gov.

You must submit this form and the documentation required above with your response in order to be considered for this preference.

STATE OF MINNESOTA – AFFIRMATIVE ACTION CERTIFICATION

If your response to this solicitation is or could be in excess of $100,000.00, complete the information requested below to determine whether you are subject to the Minnesota Human Rights Act (Minnesota Statutes §363A.36) certification requirement, and to provide documentation of compliance if necessary. It is your sole responsibility to provide this information and – if required – to apply for Human Rights certification prior to the due date and time of the proposal and to obtain Human Rights certification prior to the execution of the Contract. The State of Minnesota is under no obligation to delay proceeding with a contract until a company receives Human Rights certification.

BOX A – For companies which have employed more than 40 full-time employees within Minnesota on any single working day during the previous 12 months. All other companies proceed to BOX B.
Your response will be rejected unless your business:
Has a current Certification of Compliance issued by the Minnesota Department of Human Rights (MDHR)
   -or-
Has submitted an affirmative action plan to the MDHR, which the Department received prior to the date and time the responses are due.

Check one of the following statements if you have employed more than 40 full-time employees in Minnesota on any single working day during the previous 12 months:
☐ We have a current Certificate of Compliance issued by the MDHR. **Proceed to Box C. Include a copy of you Certification with your response**

☐ We do not have a current Certificate of Compliance; However, we submitted an Affirmative Action Plan to the MDHR for approval, which the Department received on _____(date). If the date is the same as the response due date, indicate the time your plan was received: _____(time). **Proceed to Box C.**

☐ We do not have a Certification of Compliance, nor has the MDHR received an Affirmative Action Plan from our company. We acknowledge that our response will be rejected. Proceed to Box C. Contact the MDHR for assistance. (See below for contact information)

Please note: Certificates of Compliance must be issued by the MDHR. Affirmative Action Plans approved by the Federal government, a county or a municipality must still be received, reviewed and approved by the MDHR before a Certification can be issued.

BOX B – For those companies not described in BOX A
Check below
☐ We have not employed more than 40 full-time employees on any single working day in Minnesota within the previous 12 months. **Proceed to BOX C.**

BOX C – For all companies
By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of the responder. You must also certify that you are in compliance with federal affirmative action requirements that may apply to your company. (These requirements are generally triggered only by participating as a prime or subcontractor on federal projects or contracts. Contractors are alerted to these requirements by the federal government.)

Name of Company: _____ Date_____

Authorized Signature:_____ Telephone number:_____

Printed Name:_____ Title:_____

For assistance with this form, contact:
Minnesota Department of Human Rights, Compliance Services Section

Mail:	190 East 5th St., Suite 700 St. Paul, MN 55101	TC Metro:	(651) 296-5663	Toll Free:	800-657-3704
Web:	www.humanrights.state.mn.us	Fax:	(651) 296-9042	TTY:	(651) 296-1283
Email:	employerinfo@therightsplace.net				

SAMPLE WORK ORDER LANGUAGE

STATE OF MINNESOTA
IT Professional Services Master Contract Work Order

This work order is between the State of Minnesota, acting through its Commissioner of Transportation ("State") and [fill in name of contractor, be sure to indicate if corporation, partnership, limited liability company, sole proprietor, etc] ("Contractor"). This Work Order is issued under the authority of Master Contract T-Number 502TS, CFMS Number [fill in CFMS number from the contractor's master contract], and is subject to all provisions of the Master Contract which is incorporated by reference.

Recitals

1.   Under Minn. Stat. § 15.061 [Insert additional statutory authorization if necessary] the State is authorized to engage such assistance as deemed necessary.
2.   The State is in need of [Add brief narrative of the purpose of the contract].
3.   The Contractor represents that it is duly qualified and agrees to perform all services described in this work order to the satisfaction of the State.

Work Order

1   Term of Work Order; Incorporation of Exhibits; Survival of Terms
   1.1   Effective date. This Work Order will take effect on the date the State obtains all required signatures as required by Minn. Stat. § 16C.05, subd. 2.
   The Contractor must not begin work under this work order until it is fully executed and the Contractor has been notified by the State's Authorized Representative to begin the work.

   1.2   Expiration date.   This Work Order will expire on [fill in date], or when all obligations have been satisfactorily fulfilled, whichever occurs first.

   1.3   Exhibits.   Exhibits [fill in, e.g. A – D] are attached and incorporated into this Work Order.

   1.4   Survival of terms.   All clauses which impose obligations continuing in their nature and which must survive in order to give effect to their meaning will survive the expiration or termination of this Work Order.

2   Contractor's Duties
   The Contractor, who is not a state employee, will:

   [Provide a detailed scope of services. The services must define specific duties, deliverables, and deliverable completion dates. Do not simply attach the same scope that was used in the "Statement of Work" (RFP) as a greater level of detail is needed in this work order. If using a separate attachment, use "Perform the duties specified in Exhibit A, "Scope of Services".]

3   Consideration and Payment
   3.1   Consideration
            The State will pay for all services performed by the Contractor under this work order as follows:
            3.1.1   *Compensation.* The Contractor will be paid as follows:
                     [Provide a detailed explanation of how the Contractor will be paid, for example a fixed hourly rate, or a lump sum per deliverable, some examples may be:
                     an Hourly Rate of $_____up to maximum of ____hours, but not to exceed $_____.

                     a Lump Sum of $_____.]

[Rate: rates paid may not exceed the Contractor's rates specified in their Master Contract.]

3.1.2   *Travel Expenses*. Reimbursement for travel and subsistence expenses actually and necessarily incurred by Contractor, as a result of this Work Order, will be reimbursed for travel and subsistence expenses in the same manner and in no greater amount than provided in the current Minnesota Department of Transportation Travel Regulations. Contractor will not be reimbursed for travel and subsistence expenses incurred outside Minnesota unless it has received State's prior written approval for out of state travel. Minnesota will be considered the home state for determining whether travel is out of state. See Exhibit _____ for the current Minnesota Department of Transportation Reimbursement Rates for Travel Expenses.

3.1.3   *Total Obligation*. The total obligation of the State for all compensation and reimbursements to the Contractor under this Work Order will not exceed $ [fill in].

3.2   Payment

3.2.1   *Invoices*. State will promptly pay Contractor after Contractor presents an itemized invoice for the services actually performed and State's Authorized Representative accepts the invoiced services. Invoices must be submitted in the format prescribed in Exhibit _____ and according to the following schedule:

[INDICATE WHEN YOU WANT THE CONTRACTOR TO SUBMIT INVOICES, FOR EXAMPLE: "MONTHLY" OR "UPON COMPLETION OF SERVICES," OR IF THERE ARE SPECIFIC DELIVERABLES, LIST HOW MUCH WILL BE PAID FOR EACH DELIVERABLE. THE STATE DOES NOT PAY MERELY FOR THE PASSAGE OF TIME.]

3.2.1.1   Each invoice must contain the following information: Mn/DOT Contract Number, Mn/DOT Contract invoice number (sequentially numbered), billing address if different from business address, and Contractor's original signature attesting that the invoiced service and costs are new and that no previous charge for those services or goods has been included in any prior invoice.

3.2.1.2   Direct nonsalary costs allocable to the work under this Work Order must be itemized and supported with invoices or billing documents to show that such costs are properly allocable to the work. Direct nonsalary costs are any costs that are not the salaried costs directly related to the work of Contractor. Supporting documentation must be provided in a manner that corresponds to each direct cost.

3.2.1.3   The original of each invoice must be sent to State's Authorized Representative for review and payment. A copy of the invoice will be sent to State's Project Manager for review.

3.2.1.4   Contractor must provide, upon request of State's Authorized Representative, the following supporting documentation:

3.2.1.5   Direct salary costs of employees' time directly chargeable for the services performed under this Work Order. This must include a payroll cost breakdown identifying the name of the employee, classification, actual rate of pay, hours worked, and total payment for each invoice period; and

3.2.1.6   Signed time sheets or payroll cost breakdown for each employee listing dates and hours worked. Computer generated printouts of labor costs for the project must contain the project number, each employee's name, hourly rate, regular and overtime hours, and the dollar amount charged to the project for each pay period.

3.2.1.7   If Contractor is authorized by State to use or uses any subcontractors, Contractor must include all the above supporting documentation in any subcontractor's contract, and Contractor must make timely payments to its subcontractors. Contractor must require subcontractors' invoices to follow the same form and contain the same information as set forth above.

3.2.2   *Retainage*. Under Minnesota Statutes § 16C.08, subdivision 5(b), no more than 90% of the amount due under this Contract may be paid until State's agency head has reviewed the final product of this Contract. The balance due will be paid when State's agency head determines that Contractor has satisfactorily fulfilled all the terms of this Contract.

3.2.3   *Federal Funds*. If federal funds are used, Contractor is responsible for compliance with all federal requirements imposed on these funds and accepts full financial responsibility for any requirements imposed by Contractor's failure to comply with these federal requirements.

3.2.4   *Progress Reports*.   Contractor will submit progress reports in a format and timeline designated by the State's Project Manager.

4   Liability

[Note: the following clause is the "standard" liability clause, an alternative liability clause may have been agreed to as part of the Statement of Work, in which case the liability clause offered by a vendor should have been part of the selection criteria. The contract must include a liability clause, either the standard clause or an approved alternate. Contact Contract Management if you have questions about whether to use the standard clause or an alternative]

The Contractor must indemnify, save and hold the State, its agents, and employees harmless from any claims or causes of action, including attorney's fees incurred by the State, arising from the performance of this Work Order by the Contractor or the Contractor's agents or employees. This clause will not be construed to bar any legal remedies the Contractor may have for the State's failure to fulfill its obligations under this Work Order.

5   Foreign Outsourcing

The Contractor agrees that the disclosures and certifications made in its Location of Service Disclosure and Certification Form submitted with its proposal are true, accurate and incorporated into this work order contract by reference.

6   Authorized Representatives

6.1   State's Authorized Representative. State's Authorized Representative will be:
NAME, TITLE
ADDRESS
TELEPHONE NUMBER
FAX NUMBER
E-MAIL ADDRESS

State's Authorized Representative or his /her successor, will monitor Contractor's performance and has the authority to accept or reject the services provided under this Work Order.

6.2   State's Project Manager. State's Project Manager will be:
NAME, TITLE
ADDRESS
TELEPHONE NUMBER
FAX NUMBER
E-MAIL ADDRESS

State's Project Manager, or his/her successor, has the responsibility to monitor Contractor's performance and progress.   State's Project Manager will sign progress reports, review billing statements, make recommendations to State's Authorized Representative for acceptance of Contractor's good or services and make recommendations to State's Authorized Representative for certification for payment of each Invoice submitted for payment.

6.3 **Contractor's Authorized Representative**. Contractor's Authorized Representative will be:
NAME, TITLE
ADDRESS
TELEPHONE NUMBER
FAX NUMBER
E-MAIL ADDRESS

If Contractor's Authorized Representative changes at any time during this contract, Contractor must immediately notify State.

6.4 Contractor's Key Personnel. Contractor's Key Personnel will be:
(names, titles)

Key Personnel assigned to this project cannot be changed without the written approval of the State's Project Manager. Contractor will submit a change request in writing to the State's Project Manager along with a resume for each potential candidate. Potential new or additional personnel may be required to participate in an interview. Upon approval of new or additional personnel, the State's Authorized Representative may issue a change order to add or delete key personnel.

7 **Time**
The Contractor must comply with all the time requirements described in this Work Order. In the performance of this Work Order, time is of the essence.

8 **Employee Status**
Pursuant to the Governor's Executive Order 08-01, if this contract, including any extension options, is or could be in excess of $50,000, Contractor certifies that it and its subcontractors:

8.2 Comply with the Immigration Reform and Control Act of 1986 (U.S.C. 1101 et. seq.) in relation to all employees performing work in the United States and do not knowingly employ persons in violation of United States immigrations laws; and

8.3 By the date of the performance of services under this contract, Contractor and all its subcontractors have implemented or are in the process of implementing the E-Verify program for all newly hired employees in the United States who will perform work on behalf of the State of Minnesota.

Contractor must obtain certifications of compliance with this section from all subcontractors who will participate in the performance of this contract. Subcontractor certifications must be maintained by Contractor and made available to the state upon request. If Contractor or its subcontractors are not in compliance with 1 or 2 above or have not begun or implemented the E-Verify program for all newly hired employees performing work under the contract, the state reserves the right to determine what action it may take including but not limited to, canceling the contract and suspending or debarring the contractor from state purchasing.

9 **Additional Provisions**
[Use this space to add information not covered elsewhere in this Work Order. If not needed, delete this section or state "None". The following should be used in any Work Order that includes web design:

The Contractor will comply with the "Minnesota Office of Enterprise Technology: Web Design Guidelines" available at the URL: http://www.state.mn.us/portal/mn/jsp/content.do?programid=536911233&id=-536891917&agency=OETweb.

The balance of this page has been intentionally left blank.

EXHIBIT ____

DISADVANTAGED BUSINESS ENTERPRISE (DBE)
SPECIAL PROVISIONS - CONSULTANT CONTRACTS

RACE/GENDER NEUTRAL GOAL

POLICY STATEMENT

It is the policy of the Minnesota Department of Transportation (Mn/DOT) that DBEs, as defined in 49 C.F.R. Part 26, and other small businesses shall have the maximum feasible opportunity to participate in contracts financed in whole or in parts with federal funds. Consistent with this policy and Title VI of 1964 Civil Rights Act, Mn/DOT will not allow any person or business to be excluded from participation in, denied the benefits of, or otherwise be discriminated against in connection with the award and performance of any U.S. Department of Transportation (DOT) assisted contract because of sex, race, color, or national origin. Mn/DOT has established a Disadvantaged Business Enterprise (DBE) program in accordance with the regulations of the DOT, 49 C.F.R. Part 26 to implement this policy.

CONTRACT ASSURANCE

The Contractor, Sub-recipient, Sub-consultant or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out all the applicable requirements of 49 C.F.R. Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as Mn/DOT deems appropriate.

Furthermore, Title VI of the Civil Rights Act of 1964 assures that no person or group of persons may, on the grounds of race, color, national origin, sex, age, handicap or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any and all programs or activities administered by Mn/DOT. For further information regarding Title VI, please contact the Office of Civil Rights, 395 John Ireland Blvd., MS 170, St. Paul, MN 55155-1899. Our telephone number is: (651) 297-1376

The above information is applicable to every Contractor including every tier of sub-consultants, subcontractors, supplier or service providers on this project. It is the responsibility of the prime Contractor, and all sub-consultants, subcontractors, suppliers and service providers to ensure equal opportunity for all firms to participate on this project.

RACE/GENDER NEUTRAL GOAL

There is **no specific numerical DBE goal assigned** to this project. While **no** numeric DBE goal is assigned to this contract, the Contractor, sub-recipient, sub-consultant or subcontractor **should** make every reasonable effort to solicit DBE firms to participate as sub-consultants, subcontractors, service providers and suppliers on this project.

The Contractor may find DBE firms certified by the Minnesota Unified Certification Program in Mn/DOT's Disadvantaged Business Enterprise (DBE) Directory. The DBE Directory can be found at the following website:

http://www.dot.state.mn.us/eeocm/ucpdirectory.html

ADDITIONAL SUB-CONSULTANTS, SUBCONTRACTORS, SUPPLIERS AND SERVICE
PROVIDERS

Whenever an additional sub-consultant, subcontractor, supplier or service provider is selected, and it has not
been previously reported to the Mn/DOT Office of Civil Rights, the Contractor or its designated EEO Officer
shall promptly provide Mn/DOT EEO office with the following information regarding the subcontract:

a)   The name of the sub-consultant, subcontractor; supplier or service provider;
b)   The total dollar amount of the subcontract;
c)   The specific work items covered by the subcontract;
d)   Estimated quantities of each work item; and
e)   Individual unit prices (if applicable).

SUBMITTAL OF DOCUMENTATION
Following contract award, the apparent successful consultant shall submit a completed list of all sub-
consultants, subcontractors, service providers and suppliers that submitted bids on the attached Bidders List.

**This Race/Gender Neutral Goal Language is an addendum to the Mn/DOT DBE Special Provisions for
Consultant Contracts.**

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF CIVIL RIGHTS

BIDDER'S LIST
(Consultant Contracts)

State Project #: _____

Prime Contractor _____   Contract Amount _____   Goal _____

Total DBE Commitment _____   (_____ %)

List all comparative quotes of participants performing on the project and participants that bid, including DBEs and non-DBEs.
Include Sub-consultants (or Subcontractors, Suppliers & Service providers).

	Name, Contact Name and Phone number of Contractor *	Check (√) Firms That Will Be Used	Description of Work	Subcontract Dollar Amount
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11				
12.				

* Please indicate with an asterisk (*) or check mark (√) which sub-consultants (or subcontractors, suppliers and service providers) you will be using on the project.

(Make additional copies of this form as necessary)

Mn/DOT OCR
2/2006

DBE Page 3

Page _____ of _____

<u>**EXHIBIT A – Enhancement Documents**</u>

<u>10/20/2009</u>
<u>**Enhancement #1 Change Perspective from Projects to Agreements**</u>
- Background:
    - FRW/OFCVO implements safety and trunk highway projects at the agreement level. RGCIP was developed at the project level (E.g.. the state project level, or S.P.) rather than the agreement level.
    - All project management pages after the project initiation screen should be based on the agreement level, not the project level. This includes agreement management, construction management, financial, billing and closeout pages.
    - The tasks per agreement, which appear on the project initiation screen, should be replicated on one of the agreement screens. From the project initiation screen, navigation should allow a link directly to agreement information - currently you must return to the search screen to get to the correct agreement - navigation is very awkward.
    - On the agreement management page there should be totals for the amounts under the cost breakdown.
    - All project pages, except the page which lists all the agreements under one SP, should list information by agreement (i.e. billing, agreement tasks, agreement activities, close-out).
    - The project page that lists all agreements under one SP, should also list the individual and total cost of all of the agreements.
- Discussion:
    - TS- The changes described in Enhancements 1 and 2 are closely tied together
    - BD- The business will need to resolve the ambiguous use of the terms 'project' and 'agreement'.
    - BD-It appears that this enhancement would be primarily affect the user interface and not the underlying database structure.
    - BD-The details shown below were prepared in 2007 and will need to be refined and updated.

    A) Screens Affected –
    1. **Project & Agreement Search Screen**
       a. – move search filter columns closer together
       b. – move the 'add non-MnDOT project' button to the 'Initiate Project' screen *DH-The 'Add Non-Mn/DOT Project' button on the Project and Agreement Search screen opens a new 'Initiate Project' screen that allows users to add a new Mn/DOT project. This is currently the only way a user can get to the Initiate Project screen without an SP number that has come in from PPMS.*

    2. **Initiate Project (screen # uc120)**

a. – see change 1.b. above

b. – ~~replace the 'PPMS Cost Est.' field with a more useful field~~ (leave this field in)

c. – ~~replace 'Federal Authorization Date' field to~~ ? leave this field in)

d. - ~~replace 'Federal Authorization Amount' field to ?~~ (leave this field in)

e. – ~~Remove 'Associated Project' field. The 'Associated Project' field allows for the selection of any other project (one) to indicate that the two projects are related (a foreign key to the same table, 'project')~~. leave this field in

f. – Change screen to allow user to select an agreement from any of the agreements that are displayed in a list. Then, as each of the sub forms (financial summary, construction management, billing) are selected, show the data for the selected agreement.

g. – Change to allow selected users to edit an agreement number field. Now an agreement can added with no agreement number. This would allow a user to add a new agreement number at a later date. In this screen only agreements that have no financial information or activities listed on the agreement management screen, can be edited. Currently, editing agreement numbers can disassociate the financial info from an agreement and from the agreement activities. This change will prohibit this from happening.

h. – ~~Remove or disable 'Project Status' field? remove field from screen? Remove field from table? remove data from db?~~ (leave this field in

3. **Agreement Management (screen # uc121) –**
   a. - As described in 2.f. above, in this form display agreement management data for the agreement that was selected in the project screen
   b. – Remove the close out information from this screen, it will be moved to the 'Closeout' screen described in A.7.
   c. – Remove the 'Low SP No' and 'Project Amount' fields from the header area of the screen.
   d. – Move 'Agreement No' and 'Agreement Status', fields to the header area (top) of the screen. Add 'Total Agreement Amount' field to the header area (top) of the screen. The 'Total Agreement Amount' would be the total of all billing categories for the agreement. The 'Agreement Status' field is user editable (with the appropriate rights).
   e. – In the 'Contribution from Participants: Cost Breakdown' area of the screen, add total fields for each of the following columns: Fed., State, HSA, LRA, RR, and Other. These fields would be calculated and displayed but not stored.
   f. – In the 'Contribution from Participants: Percentage Breakdown' area of the screen, add a total field for the 'Cost' column. This will total up the cost if there is more than one Billing Category. These fields would be calculated and displayed but not stored.

      g.

4. **Financial Summary (screen #uc121.1)** –
a. - As described in 2.f. above, in this form just display financial summary data (invoices & encumbrances) for the agreement that was selected in the project screen
b. - remove the 'Project Amount' field at the top of the screen (because this is a project level field and we want this screen to focus on the agreement). *DH-Remove low SP also? SA-yes*
c. - correct the 'Billed To Date', Paid to Date', 'MAPS Encumbrances', and 'Agreement Amount' fields to show the correct amounts for the selected agreement. *DH-Is this carried in MAPS at the agreement level? SA-yes*
d. – remove the 'PPMS Estimates' field (because this is a project level field and we want this screen to focus on the agreement).
e. – Remove the 'Low SP No' and 'Project Amount' fields from the header area of the screen
f. – Add/move 'Agreement No' and 'Agreement Status', 'Total Agreement Amount' fields to the header area (top) of the screen. 'Agreement No' and 'Total Agreement Amount' fields are display only and are not editable. The 'Agreement Status' field is user editable (with the appropriate rights)?- *SA will check DH-The 'Agreement Status' field can be edited by the Project Manager and Super User roles. There are currently no business rules being enforced for 'Agreement Status'. SA-no business rules needed for this item. SA will check with Marge on this. SA-Is ok with this the way it is*

5. **Construction Management (screen #uc63)** –
a. - As described in 2.f. above, in this form just display Construction Management data (project activities & note) for the agreement that was selected in the project screen
b.   – Remove the 'Low SP No' and 'Project Amount' fields from the header area of the screen
c. – Add 'Agreement No', 'Agreement Status' and 'Total Agreement Amount' fields to the header area (top) of the screen. 'Agreement No' and 'Total Agreement Amount' fields are display only and are not editable. The 'Agreement Status' field is user editable (with the appropriate rights)? *SA will check the business rules on this. DH-The 'Agreement Status' field can be edited by the Project Manager and Super User roles. There are currently no business rules being enforced for 'Agreement Status'. SA-ok, we don't care if there are no business rules. BD-Why allow to edit agreement status in this screen? Wouldn't the 'agreement management screen be more appropriate?*

d. – Remove the 'State Project No', 'Project Type', 'Project Status', and 'OFCVO Project Desc.' fields from this screen (because this is a project

level field and we want this screen to focus on the agreement). *DH-'OFCVO Project Desc.' is an editable field to be used by OFCVO staff to put in any description (project or agreement related) that will help in identification of the project/agreement. This was originally requested to allow for a detailed description of the railroad related work, especially on TH projects with a railroad component. This could be changed to 'OFCVO agreement desc', if that would better suit business need. SA- do not change OFCVO project description to 'agreement'. Because the construction mgmt screen is at the agreement level and it does not make sense to display project level info.*

6. **Billing (screen # uc42)** –
   a. - As described in 2.f. above, in this form only display Billing data for the agreement that was selected in the project screen.
   a. – Remove the 'Low SP No' and 'Project Amount' fields from the header area of the screen
   c. – Add 'Agreement No', 'Agreement Status' and 'Total Agreement Amount' fields to the header area (top) of the screen. 'Agreement No' and 'Total Agreement Amount' fields are display only and are not editable. The 'Agreement Status' field is user editable (with the appropriate rights)? - *SA will check on this. DH-The 'Agreement Status' field can be edited by the Project Manager and Super User roles. There are currently no business rules being enforced for 'Agreement Status'. SA- ok, we don't care if there are no business rules.*

7. **Closeout (screen # uc?)** – During development, the original closeout screen was removed. A screen shot of the previous application Closeout screen is included as Exhibit 1.1. The proposed closeout screen is included as Exhibit 1.2.
   a. – Create a closeout screen showing information for the selected agreement. The layout will be similar to the Closeout screen in the previous RGCIP.
   b.– Add 'Agreement No', 'Agreement Status' and 'Total Agreement Amount', 'Agreement Date' fields to the header area (top) of the screen. 'Agreement No' and 'Total Agreement Amount' fields are display only and are not editable. The 'Agreement Status' field is user editable (with the appropriate rights)? - *SA will check on this DH-The 'Agreement Status' field can be edited by the Project Manager and Super User roles. There are currently no business rules being enforced for 'Agreement Status'. SA- ok, we don't care if there are no business rules*

   c. – Include a job number field(s) in the screen and allow a user to enter (or edit?) an average of 8 job numbers per agreement.
   d. – Include fields for entering and editing actual agreement costs. *(SA)*

e. – Include a field for adding and editing agreement closeout activities

8. **Add 'Closeout' option** to the screen tabs and navigation menu

B) Reports Affected –

1. **Agreement Management Report** –change needed? (Simon will determine)

2. **Request for Authorization to Proceed Report -** change needed? (Simon will determine)

3. **Financial Reports -** change needed **?** (Simon will determine)

4. **Create a new report – Closeout Report (Susan to provide example attach as Exhibit 1.3)** *SA-Take this report out of the enhancements. Have Simon build after enhancements completed. BD-We need to prototype this report as a part of requirement specification to ensure that the closeout screen has the fields to support it.*

C) Data Tables Affected –

1. **Project – no change**

2. **Agreement Header-**
   a. Currently non-MnDOT projects have construction activities but no close out activities, no billing activities, no agreement activities, and no financial information. Proposed change is that for every existing non-funded project the system must create a unique agreement number for all non-MnDOT project (see discussion in Enhancement 4). This will allow the non-MnDOT project activities to be displayed in the Construction Activity screen.

3. **Agreement - no change ?**
   a. Add fields for total agreement amounts as per item A.3.d?
   b. Add fields for Marge to enter and edit actual agreement costs? (as shown on proposed CloseOut screen, Exhibit 1.1?

4. **PPMS PM Project** – 10/16/07 decided to leave these fields in
   a. ~~Remove 'Cost Estimates' field? As per I.A.2.b. Also, remove this data from the table ?~~

~~b. Remove 'Fed_Auth_Date' field? As per I.A.2.c. Also, remove this data from the table ?~~

~~c. Remove 'Fed_Auth_Amount' field? As per I.A.2.d. Also, remove this data from the table?~~

5. Add a **Job Number** table to support the closeout screen I. A.7. above (an agreement can have up to 8 job numbers)

6. Add a table to allow for recording and editing actual dollar amounts of agreements (as shown in the proposed Closeout screen). *DH-It is possible these amounts could get out of sync with MAPS. How would that impact billing and payment reports? SA- True, But Marge can handle this variance.*

7. Add a table to store closeout activities for an agreement, to support the closeout screen I. A.7. An agreement can have zero, one or many agreement closeout activities. This may be just use of the existing Activity table because each activity has a type, these could have a type of 'Closeout'.

D) Business Rules Affected – to be determined

E) Business Processes Affected – to be determined

F) Other Effects? –

1. Documentation changes? Update process steps in application documentation for: 1- Initiate Project, 2 – Agreement Management, 3 - ?, 4 – Construction Management, 5 – Billing, 6 – Closeout

Scoping Worksheet Notes:

Exhibit 1.1 – Old Closeout Screen

Exhibit 1.2 – Proposed Closeout Screen

Prototype closeout Screen

Agreement No.

Agreement Date:

Agreement Status:	Audit
	Closed
	Executed
	Initiated

Agreement Amount:

— *drop down*

Federal Project No: (PPMS)
SP #:   (PPMS)
Job # 1 – 8: — *ability to manually enter up to 8 job #'s*

Certificate of Completion: (date)
Operating License: (date)

Signal Work: actual $ (Fill in fields)
Road Work: actual $
Track Work: actual $
Flagging: actual $
Surface Work: actual $
ROW Acquisition: actual $
Other: actual $
Total: actual $ (Automatic total) — Financial Summary after final bill

actual billed amounts

Close-out Activities

Agreement to Audit: (date)
Audit Certificate: (date)
Citation Sent: (date)
Citation Response received: (date)
Audit Certificate Approved: (date)
Final Payment Requested: (date)
Final Payment Made: (date)
Agreement Closed: (date)
Administrative Settlement: (date)

→ *drop down menu w/ date field*

Exhibit 1.3 – Proposed Closeout Report-

"New closeout Report" (handwritten)

Minnesota Department of Transportation
Trunk Highway Project Closeout Status Report (By State Project Number)

STPROJ	AGMT	USDOTNO	CITY	LOCATION	FILE	Trunk Highway	Safety Code	Agmt Date	Inspect Signals	Inspect Surface	Operating License	Bid Letting Date	Rec'd Final Bill	Final to Audit	Audit Cert	Final Pmt
0202-85		082928G	RAMSEY	SUNFISH LAKE BLVD NW	F0964	10	5G 5H 5I					06/15/08				
0206-31	67511	082926T	ANOKA	FERRY ST	F0181A	47	5I	09/07/90	02/26/92				09/27/91	10/08/91	10/23/91	03/23/92
0206-31	68965					47	5W	11/25/91					04/27/93	04/28/93	05/05/93	05/24/93
0206-53	80594	082926T	ANOKA	FERRY ST	F0181A	47	5I	08/02/00					10/02/00	11/01/00	01/04/01	10/30/00
0206-55	88092	082926T	ANOKA	FERRY ST	F0181A	47	5D 5I 5Y	06/02/05	10/20/05	10/20/05	07/03/06		10/27/05	07/13/06	10/03/06	12/07/06
0212-42	83300	061576V	COON RAPIDS	MAIN ST	F0660	242	5R 5Y	06/14/02	10/06/04		04/18/05		10/03/03	03/22/05	06/03/05	04/16/07
0215-970	84317					10	5Y	01/28/03					08/09/06	08/21/06		08/17/05
0217-19	79873					610	5Y 5Z	05/04/00					07/16/04	09/24/04	05/04/05	08/13/04
0285-028	64067					694	5U 5Y	06/23/87					04/24/90	07/10/90	10/29/91	01/31/92
0301-						10										
0301-030	69009					10		02/11/92								
0301-030	69183					10	5W	04/30/92								
0301-38	66142	081025S	DETROIT LAKES (2.5 MI. W)	RICHARD'S GRAVEL PIT SPUR	F1636	10	5I	06/30/89		01/28/91		12/03/90		01/18/91	02/25/91	04/15/91
0301-44	72794	081025S	DETROIT LAKES (2.5 MI. W)	RICHARD'S GRAVEL PIT SPUR	F1636	10	5E	12/02/94	06/17/96				10/13/95	01/18/96	11/01/96	
0301-47	90596					10	5I,5R,5U,5X,5Y	01/29/07				02/23/07				
0301-47	90595	081021P	DETROIT LAKES	LAKE AVE	F0576A	10	5G 5L	01/31/07				02/23/07				
0301-47	90547					59	5U 5O 5Y 5Z	02/14/07				01/26/07				
0301-47	86878					10	5T	08/04/04				10/29/04				
0302-53	71206					10	5D	09/01/93					02/23/95	02/27/95	10/20/95	12/01/95
0302-63	87460					10	5Y	02/04/05				02/25/04				
0302-64	89205					10	5M 5U 5Y	04/03/06				03/24/06				
0302-64	89277	081010C	DETROIT LAKES	RANDOLPH RD	F1264	10	5R 5H 02/13/06					02/24/06	04/26/07			
0302-64	88817					10	5W	10/27/05				02/24/06				
0406-42	78585					2	5Y	04/14/99					07/26/00	10/25/00	02/26/04	04/27/04
0408-19	73215					2	5Y									03/13/98
0416-23	75180	075841Y	BEMIDJI	PAUL BUNYAN DR SE	F0382	197	5I	09/09/96		08/31/00			12/28/98	12/21/99	08/03/00	12/20/00

Exhibit 1.4 – Project and Agreement Search Screen

Exhibit 1.5 – Initiate Project Screen

Exhibit 1.6 – Agreement Management Screen (uc121)

Exhibit 1.7 – Financial Summary Screen (uc121.1)

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Exhibit 1.8 – Construction Management Screen (uc063)

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Exhibit 1.9 – Billing Screen (uc042)

09/30/2009
Enhancement #2 Improve Initiate Project Screen

- Background:
    - When there are multiple agreements under the same SP #, it is cumbersome to move between agreements.
    - Viewing an alternate agreement under the same S.P. requires going back to the search page, locating the sp# and then finding the correct agreement. This should be corrected so that you go from the SP# page with the list of agreements and can hyperlink directly to the agreement.
- Discussion:
    - TS- Enhancement #1 should get implemented first. Based on those changes we expect that there would be some changes to the initiate project screen.
    - BD-Would implementation of enhancement #1 eliminate the need for this enhancement?
    - BD-The enhancement details shown below reflect analysis that was done in 2007 and will need to be updated.

A) Screens Affected –
1. **Initiate Project Screen # UC120**
   a. – Make the agreements shown in the search result list (titled Agreement) in the bottom ½ half of the screen, hyperlinks (or other technique for selecting such as a 'detail' link) so that when an agreement is selected, the user is taken to the Agreement management page for the selected agreement. The current screen now shows the agreement info but does not allow a user to select an agreement to edit. When agreement management is selected the user is shown the lowest number agreement.

B) Reports Affected – to be determined

C) Data Tables Affected – to be determined

D) Business Rules Affected – to be determined

E) Business Processes Affected – to be determined

F) Other Effects? – to be determined

Scoping Worksheet Notes:

Exhibit 2.1 - Current Initiate Project Screen #UC120

10/09/2009
Enhancement #9.24 Clarify Use of Terms

- o Background: Clarify the use of terms "railroad owner", "railroad operator" and "rrcode" on screens (this task is to edit certain terms on screens …. not to add, delete or move data elements.) Should be an abbreviation of the operator name.
  - ▪ Inventory Search screen -- RR Code
  - ▪ Crash Data screen (UC113.1) -- RR Code and Name
  - ▪ Initiate Project screen (UC120) – RR Code in the results section
  - ▪ Railroad & Hwy Volume (UC111.1) RR code in trackage rights and separate tracks section
- o Discussion:
  - ▪ TS- Some work was done last year in refining this enhancement. This would need to be revisited and updated before a solution is designed.

  - o Which of the terms is correct? RR Code=Railroad Operator
  - o Need to have Confluence determine which fields in the database are populating these fields in the forms

A) Screens Affected – Business will identify screens, what is currently there and what they want the label to be.

1. **Inventory Search Screen**
    Change "RR Code" label to "RR Oper."
2. **Crash Data Screen UC113.1—RR Code and Name**
    Change "RR Code" label to "RR Oper."
3. **Initiate Project Screen uc120—RR Code in the results section**
    Change "RR Code" label to "RR Oper."
4. **Railroad & Hwy Volume (UC111.1) RR Code in trackage rights**
    11/27/2007 business says leave as is
5. **Project Search Screen (UC____)**
     Change "RR Opr." label to "RR Oper."
6. **Other screens?** – Need to identify

B) Reports Affected- Need to identify

C) Data Tables Affected- Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

P1285 RGCIP Enhancements

Exhibit 9.24.1 Inventory Search Screen

Exhibit 9.24.2 Crash Data Screen UC113.1—RR Code and Name

P1285 RGCIP Enhancements

Exhibit 9.24.3 Initiate Project Screen uc120—RR Code in the results section

Exhibit 9.24.4 Railroad & Hwy Volume (UC111.1) RR Code in trackage rights

Exhibit 9.24.5 Project Search Screen (UC   )

Enhancement #12   Signal In-Service Date

- Background:
    o Populate the date for the crossing with the data from the Project side of the application, on the Construction Management page. This will affect the Non-MnDOT Project page as well. This data is now on the warning device page.
    o Signal in-service date is the date that the signals began working. The in-service date usually occurs before a project is completed.
    o Currently signal in service date is carried on the project side of the application.
- Discussion:
    o TS-We need to further define what should be displayed on the three data elements now in the Inventory screen.
    o TS-This may involve migration of some data now in the current system.
    o GT-The service date now changes when the embedded report is run.
    o SN-The embedded report is now disabled.
    o TS-May need to move the attribute from project to inventory. Business needs to resolve how this is different from the most recent change date.

A) Screens Affected – Need to identify

B) Reports Affected – Need to identify

C) Data Tables Affected – Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

Scoping Worksheet Notes:

<u>**09/09/2009**</u>
<u>**Enhancement #15 Add Data Element – Authorized Stop Signs, Yield Signs and**</u>
<u>**Exempt Orders**</u>

- Background: Add a new data elements. Stop sign is already in the drop down list. Add stop sign issued and the date it was issued. Add exempt order and the date it was issued. Add yield sign issued and the date it was issued.
    - Before stop signs, yield signs are installed a commissioner's order must be issued. Currently RGCIP does not capture the date the commissioner's order was issued for these respective signs.
    - Currently this information is kept in a hand written spreadsheet by T. Gellerman. It is very difficult to search for records in this spreadsheet.
- Discussion:
    - SA- Data is: Stop Order Issue Date and Yield Order Issue Date, Exempt Order Issue Date. Train Out of Service Date is a sign that is placed at a crossing. This could be more than one data element and each has an issue date.
    - At this time we are note sure if this could be handled as a drop down or as separate data elements.
    - JC-Can this be fixed through application set ups? Can stop, yield, etc, be added as warning devices which have dates, etc.?
    - TS- No data migration.
    - BD-May require the addition of these fields to some reports

A) Screens Affected – Need to identify

B) Reports Affected – Need to identify

C) Data Tables Affected – Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

Scoping Worksheet Notes: ….

Enhancement #17 Add Data Element – Date Crossing Was Closed

- Background:
    - Currently there is an RGCIP data element that indicates the status of a crossing (E.g. open, closed, pending, etc.)
    - For those closed crossings there is a business need to indicate when the crossing was closed.
    - Provide the ability to record the date (month/day/year) that the crossing was closed.
    -
- Discussion:
    - SA-The closed crossing is not displayed prominently on the RGCIP screen.
    - GT-The date the crossing was closed is already stored in the Rail Feature Class of the MnDOT Base map (bd-check of base map does not show it).
    - TS-Is there a way to make the one data element stand out more, display it as red?
    - TS-Is there a need to revisit the business rule of keeping closed crossing data for six years?
    - Is there a need to import data to populate this data or just start from scratch?

A) Screens Affected – Need to identify

B) Reports Affected – Need to identify

C) Data Tables Affected – Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

Scoping Worksheet Notes: ….

Enhancement #42 Agreement History Page Needs To Be Developed/Re-Developed

- Background: The history page needs to be completely redone - should be a listing of all projects at a USDOT # open/closed/non-Mn/DOT. There should be a hyperlink from the project to the pages of project information and also a link to inventory.
- Discussion:
    - Tim, Now there are active projects and old/ closed out projects. "Agreement History" page would be the old agreements? The current RGCIP has a project history page. Moving the old agreement data to the new system is maintenance enhancement #29.
    - Identify the data and fields to use (old RGCIP and current RGCIP fields). Design and build an agreement history page, design and build db tables.
    - Tim has met with OFCVO staff and identified data elements that should be included on the agreement history page, including those data elements that would be converted from the legacy RGCIP system. Tim can provide the list.

A) Screens Affected – Need to identify

B) Reports Affected – Need to identify

C) Data Tables Affected – Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

Scoping Worksheet Notes:

P1285 RGCIP Enhancements

09/09/2009
Enhancement #70 Remove the Interface With PPMS

- Background:
    - PPMS is MnDOT's system for tracking all state transportation projects.
    - PPMS data is used to populate a list of projects in RGCIP (The list of projects may actually be coming from the data warehouse, where it was populated from PPMS).
    - Today all projects must be created in the PPMS system first, before any project record can be added to RGCIP.
    - The goal is to disconnect RGCIP from PPMS. This would allow project records to be added to RGCIP without relying on the project record existing in PPMS.
    - Any project/agreement information would then be added into RGCIP by OFCVO staff.

A) Screens Affected – Need to identify

B) Reports Affected – Need to identify

C) Data Tables Affected – Need to identify

D) Business Rules Affected – Need to identify

E) Business Processes Affected – Need to identify

F) Other Effects? – Need to identify

Scoping Worksheet Notes: ….

EXHIBIT B – RGCIP Data Model

EXHIBIT C

Minnesota Department of Transportation

395 John Ireland Blvd.
St. Paul, MN 55155

ODS's Applications Management Section:

RGCIP Enhancement Project – P1117

Software Development Environment for Java Servlets

December 21, 2007
As updated by Brian DeBlieck
Authored by: Rick Meyer, Office of Decision Support, Systems Architect
e-mail: Rick.Meyer@dot.state.mn.us

1. Introduction

This document describes the software development environment to be used for Java / J2EE applications and services. It follows the Office of Decision Support's (ODS) strategic technology recommendations for Java servlet applications.

2. Benefits

The following benefits are expected from this architecture.
- Not tied to any particular operating system or server product / platform.
- Conforms to an environment that is easy for ODS's Infrastructure Services to support.
- Is object-oriented, which promotes component-based, reusable, and extendable code. This makes it relatively easy to change, add functionality, and interface to other systems / services.
- Is service-oriented, which promotes the use of common services such as directory-based authentication, Crystal Enterprise Reports service, and Web services.
- Emphasizes W3C compliance for browsers and discourages the use of IE or Netscape proprietary functionality.

3. Development Environment

3.1 Application Technology

The application development / maintenance technology for Java servlet applications is as follows:

1. Application architecture: J2EE (Java Servlet)
2. Application development language: Java (J2SDK 1.4.x)
3. Scripting Language   JavaScript, Perl
4. Reports solution: Business Objects (Crystal) Enterprise 11
5. Database: Oracle 10g
6. Object / relational mapping: Hibernate 2
7. Controller framework: Struts
8. View / presentation framework: HTML, CSS, Velocity
9. Servlet application server: Tomcat (ver. 5.5)
10. Code version control system / repository: CVS
11. Build / deploy / dependency tool: Ant & Maven
12. Integrated Development Environment (IDE):   Eclipse IDE
13. Detail modeling / design tool: Eclipse UML
14. Primary detail build / programming tool: Eclipse IDE
15. Primary testing tools: Eclipse, JUnit, HTTP Unit
16. CVS interface tools: Eclipse, Tortoise, ViewCVS
17. Defect / Issue tracking tool: JIRA

Java Servlet Application Technology Model:
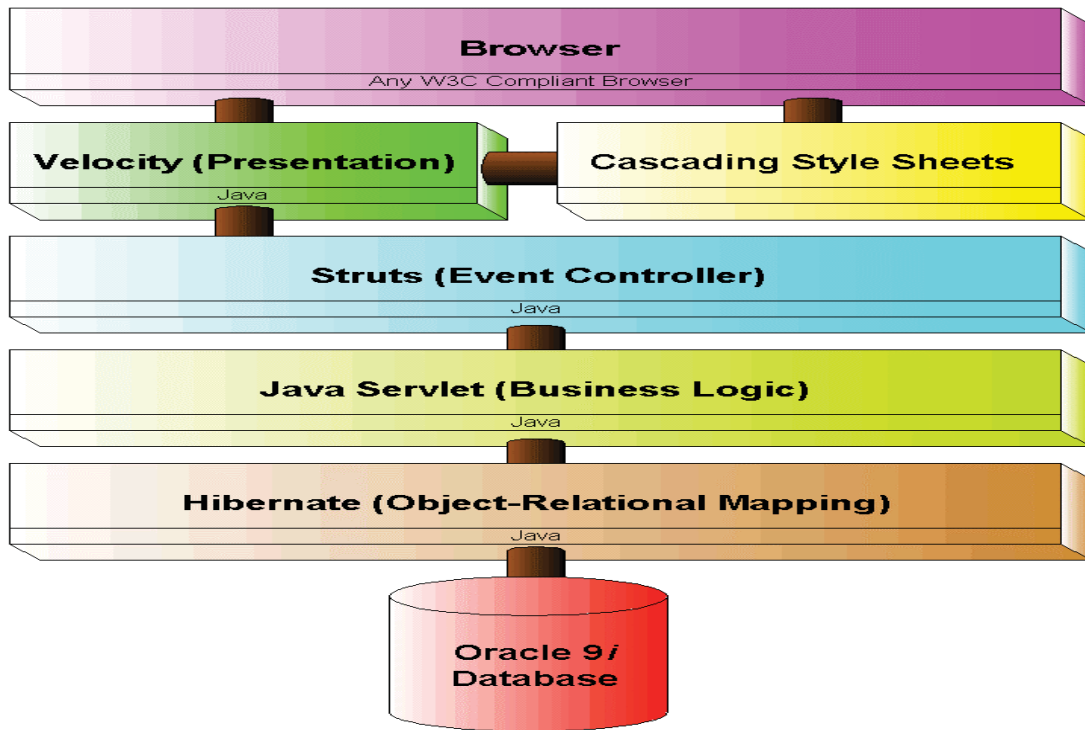
Development / Maintenance Environment Technology Model:
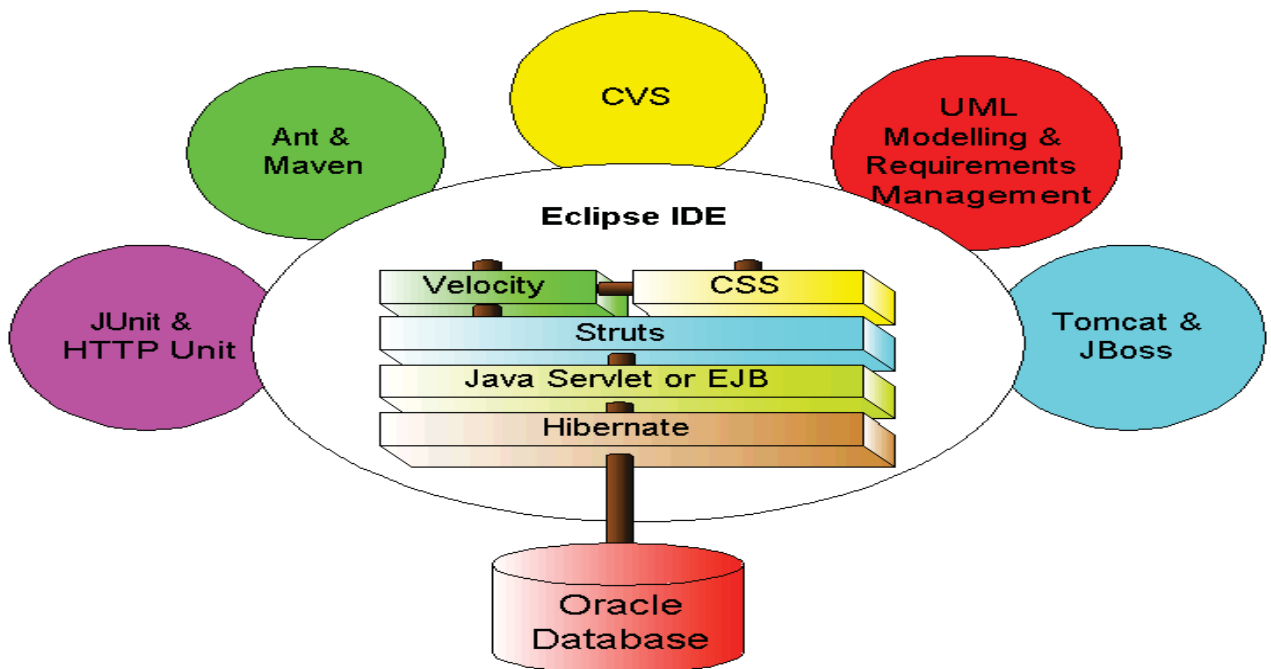
3.2 Development Environment Specifications and Processes:

Mn/DOT's Office of Decision Support (ODS) has specifications for a Java servlet that software developers will follow. These include:

1. **Coding Standards:**

   Developers will follow Sun Microsystems' coding standards. Located at
   http://java.sun.com/docs/codeconv/
   Developers will use PMD to check coding compliance to best practices and will deliver a clean PMD report at the end of each iteration. PMD is located here:
   http://pmd.sourceforge.net/

2. **GUI Standards:**

   Developers will follow Mn/DOT GUI standards for consistent "look and feel" with other Mn/DOT Web applications. Examples include Surplus Equipment App (Freebay), Application Inventory (AIA), Fly Or Drive (Aeronautics). Mn/DOT's Template Application includes pages that meet GUI standards. It's best to start with these pages. See "Template Application" for more detail.

   Developers will follow these Screen Numbering Guidelines:

   Developers should following this example. Group the application's functionality into major categories and follow the example below. If there are more than 5 major categories, the developer can use smaller series' (2000 – 2499, 2500 – 2999, etc)

```
General screens - 1000 series
1000 - Welcome or index.html
1010 - Login
1020 - Common / Site-level search & search results

Major Functional Category #1 - 2000 series
2000 - Major Function General Info
2100 - View / Edit General Info
2200 - View / Edit Specific Info

Major Functional Category #2 - 3000 series
3000 - Major Function General Info
3100 - View / Edit General Info
3200 - View / Edit Specific Info

Major Functional Category ...

Report Screens - 7000 series

7000 - Report

Error Screens - 8000 series

8000 - Error

Help & About Screens - 9000 series

9000 - Help

9500 - About
```

3. **Versioning Standards:**

   Developers will follow Apache Software Foundation's versioning guidelines. Located at http://apr.apache.org/versioning.html

   ODS's simple description of versioning guidelines are as follows:

   A <Major>.<Minor>.<Patch> numbering system is recommended to track software revisions when a new version is released.

   A Major Release is a full product upgrade of the software containing significant new functionality. A Major Release is necessary if there are changes to the model or compatibility with previous versions cannot be maintained. When the Major Release version number is incremented, the Minor and Patch version numbers are reset to zero.

A Minor Release is a planned update to the existing software incorporating standard maintenance, improvements to existing features, enhancements and bug fixes. When a Minor Release number is incremented, the Major Release version number remains unchanged and the Patch Release version number is reset to zero.

A Patch Release is distributed when necessary to correct critical or significant problems that impact a customer's use of the system. When the Patch Release version number is incremented, the Major and Minor Release version numbers remain unchanged.

4. **Template Application:**

Developers will begin a project with ODS's 'template application', which consists of the technology listed in Section 3.1 and base configuration. This provides developers with a jump-start shell of an application. It helps ensure the developer starts within a Model/View/Controller framework and uses built-in patterns and best practices.
Contact Rick Meyer – Rick.Meyer@dot.state.mn.us for a copy of the template app.

5. **Software build, dependency, and version management:**

Developers will use Ant, Maven, and CVS for build, dependency, and version management.
Developers will provide an Ant or Maven build script that builds the project without any IDE dependencies .

Developers will build .war files for production deployment.

    Ant Home
        Ant Manual

        Ant Best Practices

    Maven Home
        Maven Best Practices

        Using Maven to start your new project

    CVS Home

6. Source Code Maintenance:

Developers will provide and maintain application source files, configuration files, database schemas and scripts, developer documentation, and other related artifacts in Mn/DOT's CVS.

7. Documentation Tags (Javadoc):

Developers will use Javadoc tags for documentation. Please follow Sun's Javadoc reference

8. Configuration Tags (Xdoclet):

Developers will use Xdoclet tags for configuration.

9. Object / Relational Mapping (Hibernate):

Developers will use Hibernate for Object / Relational Mapping

10. Code Portability:

Developers will follow practices that insure code portability. Peer reviews and documented justification is required for the use of proprietary application server extensions or libraries.

11. Deployment:

Developers will follow ODS's deployment process.

Process for development server and test server application deployment:
1. Use Anonymous FTP to place a copy of the deployment files (.war) on the server. The server will automatically deploy the .war

Process for production server application deployment:
1. Use Anonymous FTP to place a copy of the deployment files (.war) on the server.

2. Submit a request to the server administrator to deploy the production application.

12. Auditing:

Models and code will be reviewed for compliance to the specifications listed in Section 3.

13. Controller Standards (Struts)

Developers will use Struts controller framework.

Struts best practices.

14. Java Application Server (JBoss)

JBoss uses embedded Tomcat 5 to host Java servlets. JBoss is used to host EJB apps.

See section 3.3 of this document for details on the hosting environment.

15. Application Security:

Servlet security is implemented in the following manner:

Set up roles-based security.

1. Set up groups in the enterprise directory.
2. Define roles in the servlet container with 'web-sec-roles.xml'.

Example:

```
<security-role>
  <description>Transit Admin Group</description>
  <role-name>Transit PTA Application Admin</role-name>
</security-role>

<security-role>
  <description>Transit Staff Group</description>
  <role-name>Transit PTA Application Staff</role-name>
</security-role>

<security-role>
  <description>Transit ProjMgr Group</description>
  <role-name>Transit PTA Application PrjMgr</role-name>
</security-role>

<security-role>
  <description>Transit Viewer Group</description>
  <role-name>Transit PTA Application View</role-name>
</security-role>

<security-role>
```

```
    <description>TCS Group</description>
    <role-name>OIT TCS Consultants</role-name>
</security-role>
```

3. Map roles to resources (screens) with 'web-security.xml'.

Example:

```
<security-constraint>
    <web-resource-collection>
        <web-resource-name>This is the Welcome Screen - todo replace Test
contents</web-resource-name>
        <url-pattern>/index.vm</url-pattern>
    </web-resource-collection>
    <auth-constraint>
        <role-name>Transit PTA Application Admin</role-name>
        <role-name>Transit PTA Application Staff</role-name>
        <role-name>Transit PTA Application PrjMgr</role-name>
        <role-name>Transit PTA Application View</role-name>
        <role-name>OIT TCS Consultants</role-name>
    </auth-constraint>
</security-constraint>

<security-constraint>
    <web-resource-collection>
        <web-resource-name></web-resource-name>
        <url-pattern>/EditMnDOTBudget.vm</url-pattern>
        <url-pattern>/Import.vm</url-pattern>
    </web-resource-collection>
    <auth-constraint>
        <role-name>Transit PTA Application Admin</role-name>
    </auth-constraint>
</security-constraint>

<security-constraint>
    <web-resource-collection>
        <web-resource-name></web-resource-name>
            <url-pattern>/MaintainContact.vm</url-pattern>
            <url-pattern>/ContractCloseout.vm</url-pattern>
            <url-pattern>/CreateContract.vm</url-pattern>
            <url-pattern>/CreateFacility.vm</url-pattern>
            <url-pattern>/CreateFundSource.vm</url-pattern>
            <url-pattern>/CreateOrganization.vm</url-pattern>
            <url-pattern>/CreateTransitSystem.vm</url-pattern>
            <url-pattern>/CreateVehicle.vm</url-pattern>
            <url-pattern>/CreateVehicleStatus.vm</url-pattern>
            <url-pattern>/EditBudgetAdjustments.vm</url-pattern>
```

```
                <url-pattern>/EditBudgetLineTypes.vm</url-pattern>
                <url-pattern>/EditBudgetRequest.vm</url-pattern>
                <url-pattern>/EditBudgetReqLineItem.vm</url-pattern>
                <url-pattern>/Import.vm</url-pattern>
        </web-resource-collection>
        <auth-constraint>
            <role-name>Transit PTA Application Admin</role-name>
            <role-name>Transit PTA Application Staff</role-name>
        </auth-constraint>
    </security-constraint>


<security-constraint>
        <web-resource-collection>
            <web-resource-name></web-resource-name>
            <url-pattern>/EditBudgetRequest.vm</url-pattern>
            <url-pattern>/EditBudgetReqLineItem.vm</url-pattern>
            <url-pattern>/EditBudgetAdjustments.vm</url-pattern>
        </web-resource-collection>
        <auth-constraint>
            <role-name>Transit PTA Application Admin</role-name>
            <role-name>Transit PTA Application Staff</role-name>
            <role-name>Transit PTA Application PrjMgr</role-name>
        </auth-constraint>
    </security-constraint>


<security-constraint>
        <web-resource-collection>
            <web-resource-name>View Resources</web-resource-name>
            <url-pattern>/EditBudget.vm</url-pattern>
            <url-pattern>/MaintainContact.vm</url-pattern>
            <url-pattern>/EditContract.vm</url-pattern>
            <url-pattern>/EditFacility.vm</url-pattern>
            <url-pattern>/EditFundSource.vm</url-pattern>
            <url-pattern>/EditOperatingtatistics.vm</url-pattern>
            <url-pattern>/EditTransitSystem.vm</url-pattern>
            <url-pattern>/EditVehicle.vm</url-pattern>
            <url-pattern>/EditVehicleStatus.vm</url-pattern>
            <url-pattern>/InspectionDates.vm</url-pattern>
            <url-pattern>/Reports.vm</url-pattern>
            <url-pattern>/SearchContact.vm</url-pattern>
            <url-pattern>/SearchEditOrganization.vm</url-pattern>
            <url-pattern>/SearchFacility.vm</url-pattern>
            <url-pattern>/SearchFundSource.vm</url-pattern>
            <url-pattern>/SearchOperatingStatistics.vm</url-pattern>
            <url-pattern>/SearchTransitSystem.vm</url-pattern>
            <url-pattern>/SearchVehicle.vm</url-pattern>
            <url-pattern>/SearchVehicle Status.vm</url-pattern>
            <url-pattern>/ViewContractAmend.vm</url-pattern>
        </web-resource-collection>
```

```
    <auth-constraint>
        <role-name>Transit PTA Application Admin</role-name>
        <role-name>Transit PTA Application Staff</role-name>
        <role-name>Transit PTA Application View</role-name>
    </auth-constraint>
</security-constraint>

<login-config>
  <auth-method>FORM</auth-method>
  <realm-name>freebay authentication</realm-name>
  <form-login-config>
    <form-login-page>/login.vm</form-login-page>
    <form-error-page>/login_error.vm</form-error-page>
  </form-login-config>
</login-config>
```

For more granular security, implement field-level security on screens in the following manner:

Use JavaScript in the screens.

1. Create re-useable JavaScript.

Example:

```
<script language="JavaScript" type="text/javascript">

/*
This function disables/enables text, textarea, select, checkbox, and radio HTML
controls based on the servlet api call request.isUserInRole.
For now, it works only on the first form on the page.  To use this function:

1. In this file set velocity variable for each role in the project.

2. Refer to the last 9 lines of index.vm for a usage example.  The velocity if
tests must all be on one line.
*/

function disableControls(trueToDisable){
    var theForm = document.forms[0]
    for(i=0; i<theForm.elements.length; i++){
      if(theForm.elements[i].type == "text" || theForm.elements[i].type ==
"textarea"
```

```
        || theForm.elements[i].type == "select" || theForm.elements[i].type ==
"select-one"
        || theForm.elements[i].type == "checkbox" || theForm.elements[i].type
== "radio" )
        {
        theForm.elements[i].disabled = trueToDisable;
        }
    }
}
</script>

#set($adminRole="Transit PTA Application Admin")
#set($staffRole="Transit PTA Application Staff")
#set($prjmgrRole="Transit PTA Application PrjMgr")
#set($viewRole="Transit PTA Application View")
```

2. Implement JavaScript on each control in the page that needs security.

Example:

```
#set($page_title="SearchVehicle")
#set($currentPage="SearchVehicle")
#set($hide_sidebar="true")
#set($ScreenID="12000")

#parse('secure.js')

<script language="JavaScript" type="text/javascript">

function onClickCreate( link)
        {
                document.searchVehicleForm.action=link;
                document.searchVehicleForm.submit();
        }

function onClickEdit( link, id)
        {
                document.searchVehicleForm.action=link+id;
                document.searchVehicleForm.submit();
        }

function subForm(link, methodVal)
        {
                //alert('subForm link is '+ link  +'  methodVal is '+
methodVal);
                document.searchVehicleForm.method.value=methodVal;
                document.searchVehicleForm.action=link;
```

```
                            document.searchVehicleForm.submit();
            }


function subFormOrg(link, methodVal)
            {
        var list = document.getElementById("orgId");
        var type = list.options[list.selectedIndex].value;

        if(type != '')
                {
                document.searchVehicleForm.method.value=methodVal;
                document.searchVehicleForm.action=link;
                document.searchVehicleForm.submit();
                }
            }


function subFormTransitSystem(link, methodVal)
            {
        var list = document.getElementById("tsId");
        var type = list.options[list.selectedIndex].value;

        if(type != '')
                {
                document.searchVehicleForm.method.value=methodVal;
                document.searchVehicleForm.action=link;
                document.searchVehicleForm.submit();
                }
            }


function disableControls(trueToDisable){
    var theForm = document.searchVehicleForm
    for(i=0; i<theForm.elements.length; i++){
      if(theForm.elements[i].type == "text" || theForm.elements[i].type ==
"textarea"
        || theForm.elements[i].type == "select" || theForm.elements[i].type ==
"checkbox"
        || theForm.elements[i].type == "radio" )
        {
        theForm.elements[i].disabled = trueToDisable;
        }
    }

}

</script>


... other stuff ...
```

```
                                                    #foreach($Vehicle in $Vehicles)
                                                            <tr width="100%" height="99%">
                                                            <div>
#if ($request.isUserInRole($adminRole) || $request.isUserInRole($staffRole) )
#set ($editText="Edit")
#else
#set ($editText="View")
#end
                                                            <td class="" ><a
href="#"
onclick="onClickEdit('$link.setAction('/vehicleEdit')?method=prepEditVehicle&Ve
hicleId=',$!Vehicle.getVehicleId())">$editText</a></td>
                                                            <td class=""
>$!OrganizationName</td>
                                                            <td class=""
>$!TransitSystemName</td>
                                                            <td class=""
>$!Vehicle.getVhclStateUnitNo()</td>
                                                    </div>
                                                    </tr>
                                            #end
                                            </table>
                                    </fieldset>
                            </td>
                    </tr>
#end
        </table>

</form>

<script language="JavaScript" type="text/javascript">
#if ($request.isUserInRole($adminRole) || $request.isUserInRole($staffRole) )
window.onload = disableControls(false);
#else
window.onload = disableControls(true)
```

16. Scripting Standards
Developers will use JavaScript or Perl for scripting.

17. Naming Standards for Web applications
User-friendly name

45

- The user-friendly name is the descriptive or popular name that identifies the application. The user-friendly name should be chosen by the project sponsor or application owner.
- Projects should determine the application's user-friendly name early in the project so it can be used in documentation.

URL

- The URL is the application's Web address.
- Projects should determine the URL for the application. The URL is typically based on the user-friendly name, and should follow these examples:
  - Production URL = appnamep.dot.state.mn.us
  - Test URL = appnamet.dot.state.mn.us
  - Development URL = appnamed.dot.state.mn.us

SSL for secure communications

- Projects should determine whether the application will use SSL (Secure Sockets) for secure communication early in the project because this affects the naming of server resources and configuration.

Short-name

- The application short-name is used to name application and data resources and artifacts where long user-friendly names would be problematic. For example, database schema names are often prepended with the application short-name.
- Projects should determine the application's short-name (typically an acronym) early in the project so project artifacts and configuration files can use this name.

18. Issue / Bug Tracking (JIRA)

Developers will use JIRA for issue / bug tracking.

Mn/DOT's JIRA is located at http://jira.dot.state.mn.us. You must be connected to a Mn/DOT network for access.

19. Developer Team Collaboration (Wiki)

ODS has a Wiki available for collaboration, documentation, and real-time information exchange. Be aware this Wiki is not a production service. Availability is not guaranteed.

Mn/DOT's Wiki is located at http://wiki.dot.state.mn.us. You must be connected to a Mn/DOT network for access.

20. Logging Standards

Developers should create the application logs in separate files. The format for the application log file is localhost_<app name>_<date>.txt.

3.3 Hosting Environment:

1. Application hosting services are typically provided by ODS's Infrastructure Section. Applications are hosted by JBoss 4 on a Red Hat Enterprise Linux server. Application hosting typically resides in Mn/DOT's Network Operations Center (NOC). The customer provides a Web site to act as the customer-facing entry point for the application. This site could be an existing Web site located inside or outside Mn/DOT's NOC.
2. Database hosting services are typically provided by ODS's Infrastructure Section. Databases reside on a Dell storage area network (SAN) managed by an Oracle 10gi RDBMS running on Microsoft Windows server. Database hosting typically resides in Mn/DOT's Network Operations Center (NOC).
3. Reports hosting services are typically provided by ODS's Infrastructure Section. The reporting solution is typically Business Object (Crystal) Enterprise. Reports hosting typically resides in Mn/DOT's Network Operations Center (NOC).

4. Development / Test Environment

Unit testing is done on development servers. Integration testing, system testing and user acceptance testing is done on test servers that reside in the same environment as the development servers.

5. Production Environment

Production instances are deployed on production servers that typically reside in the same environment as the development and test servers.

Typical n-tier Java servlet-based Web application in Mn/DOT's current infrastructure.

Java EE Deployment Diagram
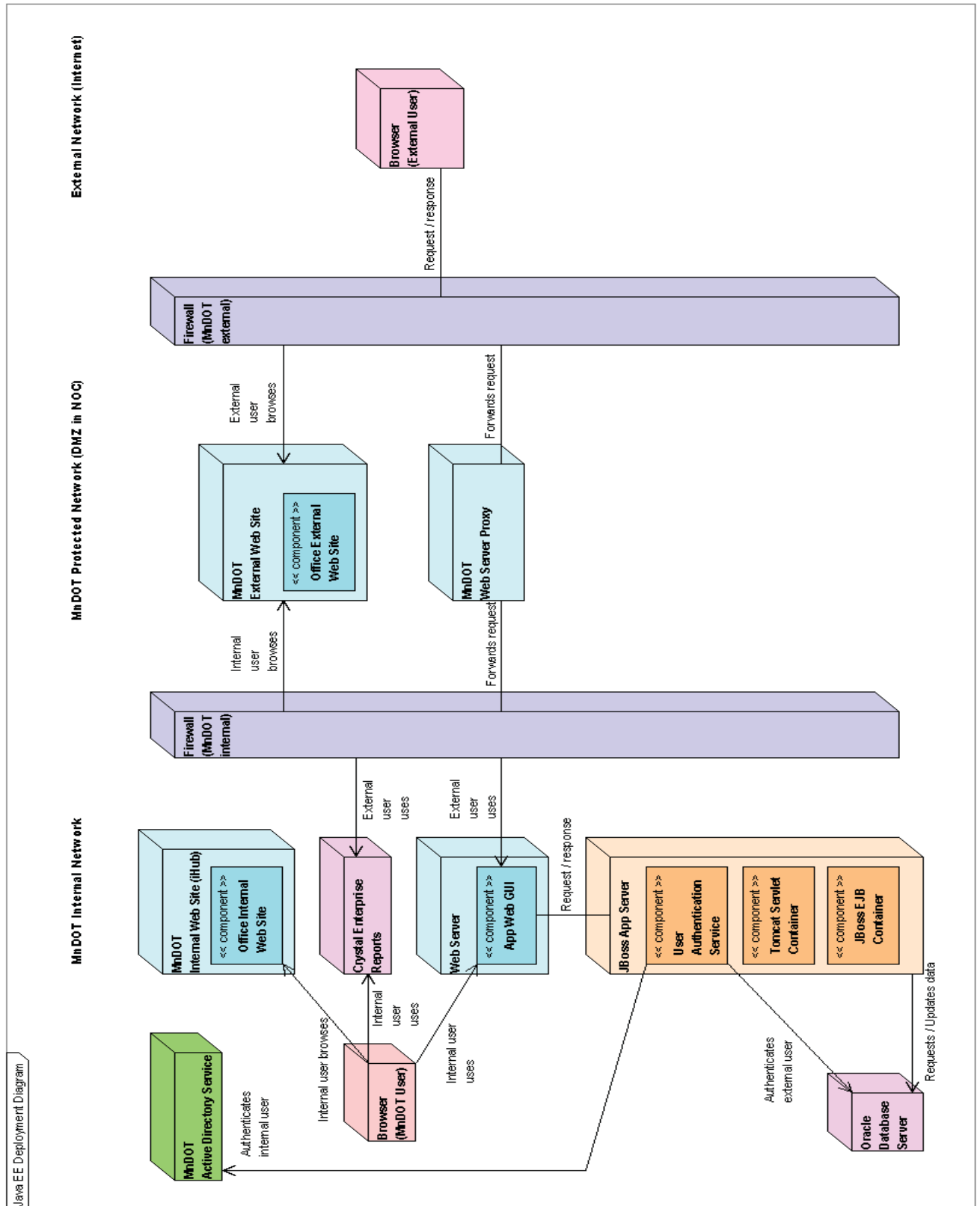
EXHIBIT D – Prioritized List of All RGCIP Enhancements Phases I-III

ID	Phase/Priority	Title	Notes
	Phase I		
1	**1-High**	Change Perspective from Projects to Agreements	See enhancement document. Contact Person is Susan. Solution Strategy: Modify screens and reports
2	**1-High**	Improve Initiate Project Screen	See enhancement document. Contact Person is Susan. Solution Strategy: Modify screens and reports
9.24	**1-High**	Clarify the use of terms (RR Owner, RR Operator and RRCODE) on screens	See enhancement document. TS- if the business has not completed its investigation, do we want to continue identifying this as a high priority? Yes. TS-This needs further scoping by the business SA- OFCVO needs to determine which of these terms are appropriate. Is this tied to #30? Need to understand how rr code is used in RGCIP now. Contact Person is Susan. Solution Strategy: Modify screens and reports
12	**1-High**	Signal in Service Date	See enhancement document. MK-estimate per data element JC-signal in service date is now carried in the project. TS-may need to move the attribute from project to inventory. Business needs to resolve how this is different from the most recent change date. SA-Populate the date for the crossing with the data from the Project side of the app. This data is now on the warning device page. GT-the service date now changes when the embedded report is run. SN-the embedded report is now disabled. Contact Person is Tim. Solution Strategy: Modify screens and reports
15	**1-High**	Add Data Element - Authorized Stop Signs, Yield Signs and Exempt Orders	See enhancement document. TS- No data migration. BD-Revised title at 9/2/09 meeting. SA-Add a new data element. Stop sign is already in the drop down list. Add stop sign issued and the date it was issued. This also includes the same info for the yield sign. This is for each crossing. Data is: Stop Order Issue Date and Yield Order Issue Date, Exempt Order Issue Date ? Train Out of Service Date is a sign that is placed at crossing? One data element and each has an issue date. Contact Person is Susan. Solution Strategy: Add data elements and update screens and reports.
17	**1-High**	Add Data Element - Date Crossing Was Closed	See enhancement document. JC-this involves migrating data from legacy system. TS-is there a way to make the one data element stand out more, display it as red? SA-The closed crossing is not displayed prominently on the RGCIP screen. They also wish to record a date that the crossing was closed. GT-The date the crossing was closed is already stored in the Rail Feature Class of the Base map (bd-check of base map does not show it). Contact Person is Susan. Solution Strategy: Add data element and improve screen.
42	**1-High**	Agreement History page	See enhancement document. History page needs to be completely redone - should be a listing of all projects at

		needs to be developed/re-developed	a USDOT # open/closed/non-Mn/DOT. There should be a hyperlink from the project to the pages of project information and also a link to inventory. Changed title 9/2/09 meeting. TS-now there are active projects and old/ closed out projects. "Project History" page would be the old projects? The current RGCIP has a project history page. Moving the old project data to the new system is maintenance enhancement #29. Contact Person is Tim. Solution Strategy: Identify the data and fields to use (old RGCIP and current RGCIP fields). Design and build a project history page, design and build db tables.
70	1-High	Remove the interface with PPMS	See enhancement document. TS- we will need to involve both the Office of Finance and the PPMS staff in designing a solution. Contact Person is Susan. Solution Strategy: Remove the requirement that a project can only be added if it exists in the lookup table. Modify app to allow OFCVO to create and modify projects/agreements
	Phase II		
10	2-Med	Need to Speed Up Searches	The search function returns a maximum of 250 records for both inventory and projects. Testing indicated that 250 records was the best balance of records returned and time to display. The design of RGCIP envisioned large searches to be handled through the report function, rather than through the search function. However, users have found it preferable to use the search function rather that the report function when conducting large searches. However, if the 250 record limit was increased, search times would increase dramatically. Number of search returns should be increased without increasing search times. SA- would like the system to return all search results, not just 250. Paging through results to view is acceptable. GT-in some cases the system could just return a count. Business wishes to be able to then follow a link to view each record. They also would like the ability to print the result list. Contact person is Susan. Solution Strategy: Modify Screens
11	2-Med	Improve Data Query Capabilities	In legacy RGCIP, users could easily and quickly query inventory and project management portions of the database to get counts and rows and columns for specific queries. Essentially, any inventory or project management data element could be queried for a count of records. The design of new RGCIP made these types of routine queries more difficult to address. Needs more discussion. SA - would like additional query capabilities beyond what they have today. Will need to identify which data elements they would want to include. Solutions include: training, use of Excel, defining reports, more searches, ad-hoc report, etc. This is related to item #10. Contact person is Tim. Solution Strategy: Modify screens and database
30	2-Med	Trackage Rights and Separate	TS-change database structure to move these attributes to the line segment level rather than the crossing level.

		Tracks Data Element Should be at Railroad Section ID Level Not the Crossing Level	TS-This is related to Enhancement 62. GT-currently trackage rights on separate tracks are carried on the crossing level, they should rather be carried on the line section level. Contact person is George. Solution Strategy: DR-Would need to determine if this a change to the Map Viewer or RGCIP database. Need more here but again if this was in a geodatabase and there was a desire to edit at the line level this attribute could be available as part of the spatial element.
50	2-Med	Improve process of adding warning devices, signs and pavement marking data	TS-This is related to Enhancement 62. TS- app design makes it difficult to perform these functions. TS-would like to see streamlined method for adding data to crossing and project side of RGCIP. OFCVO will need to propose how they want it to operate. Contact person is Tom. Solution Strategy: DR-Warning devices and signs, and pavement markings could be spatial elements if desired. Editing could take place through ArcMap. Again it would require all data in the geodatabase. RM-Assume that each item is a record, create a batch entry process or multi select as proposed by SN.
51	2-Med	Improve process of adding data to the project portion of RGCIP	TS- app design makes it difficult to perform these functions. TS-would like to see streamlined method for adding data to crossing and project side of RGCIP. OFCVO will need to propose how they want it to operate. Contact person is Julie. Solution Strategy: RM-assume that each item is a record, create a batch entry process or multi select as proposed by SN.
55	2-Med	Ability to edit numerous records without going back to search screen after editing each record	TS-This may be the same as # 51. Would like this process streamlined. TS-for example Tom wants to make it easier to hop from one crossing to another crossing to change an attribute. RM-add a button for 'next record'? Does this mean that the 'tabular edit' needs to be brought back in? Contact person is Tom. Solution Strategy: RM- add several sets of controls for next and previous record to improve navigation.
58	2-Med	Change the "Train Count Year" data element so that it is maintained at the railroad section ID level, rather than the crossing level	GT-Train volumes and train speeds are maintained at the railroad section ID level. However, train count year is maintained at the crossing level. The same logic that concluded that train volumes and train speeds should be maintained at the railroad section ID level should also have been applied to the train count year data element. TS-move train count year attribute from the crossing to the section SA-this is similar to #30. Contact person is George. Solution Strategy: RM- use same approach and estimate as enhancement #30 Perform this work in conjunction with #30. DR-Edit in RGCIP or map viewer?
73	2-Med	Update RGCIP to accommodate the changes to MAPS	BD-MAPS is the State of Mn system for accounting and procurement. RGCIP imports MAPS data through the MnDOT data warehouse. There is a state project underway to replace MAPS with a new commercial system. This enhancement would assess and modify RGCIP so that it stays in synch with the new MAPS system. Contact person is Susan and Marge. Solution Strategy: Modify screens, database, reports
	Phase III		

4	**3-Low**	Navigation From Project Screens to Inventory	In the legacy database we can navigate directly between the project pages and the inventory pages. In the new database - an additional step is required - as we have to navigate through a "search" page. It would be more efficient if we could go directly to the USDOTNO page. I understand that this may be problematic if there are multiple USDOTNO's for an agreement - however, the majority of agreements relate only to one USDOTNO. Move to 'Low' per conversation with TS & SA 9/2/09. Solution Strategy: Modify screens.
5.1	**3-Low**	Supplemental Agreements	SA-The business feels they need to take a good look at all of the implications of the interaction of original and supplemental agreements in order to identify all of the business rules and determine how they want this functionality to work. Move to 'Low' per conversation with TS & SA 9/2/09. Solution Strategy: To be determined.
8	**3-Low**	Add a 'Back' button function to screens	New RGCIP does not have a "Back" button or feature to return to the previous screen(s). It is difficult and often times cumbersome to return to a previous screen. Users have indicated that the ability to go back one (or more) page(s) is an important function. Drop per conversation with TS & SA 9/2/09. Re-evaluate need. Solution Strategy: Modify screens.
20	**3-Low**	Private Crossings	Private crossings are not in TIS. Therefore very little inventory data gets pushed to RGCIP. On the Inventory screen: add road name. On track and roadway screen: add ADT, highway speed and % heavy commercial. SA-This may not be feasible to achieve this at this time. Use the Federal Railroad Administration (FRA) database. TS-need to start tracking data elements for private crossings SA-private crossings cannot have a location (x,y) in TIS (no street name) so the location cannot be entered in RGCIP. Change RGCIP to allow data to be entered for location. DP-TIS fields are not editable in RGCIP. GT-may not want to record the street or road name for private crossings because it makes more data for them to maintain. Business needs to decide exactly what data they want to store for private crossing location. Solution Strategy: DR-need definitions from the business experts. This would be a change to the base map database to identify if the crossing is private. The process for adding a railroad crossing would be the same as today. The green sheet process may have to change.
23	**3-Low**	Eliminate Operating License Function From Inventory	JA-Printing the operating license issued to railroad now changes the operating license date to today. Operating license date is stored in two different attributes. BD-title revised at 9/2/09 mtg. TS-OFCVO is discussing dropping this item. SN-built in report has already been disabled. Ties to #12. SA-still need to remove the "operating license" page from the system. Solution Strategy: Modify screens and database.
25	**3-Low**	Printing 3 Page Report From	JC-During development Kathy didn't support stubbed reports or printing a report directly from the application. We have a reports tab that calls CE Web Page,

		Inventory Screen	supported by Simon. AM didn't want to require coding/build to make a report change. Since AM supports the report for RGCIP, you may want to validate this. User has already selected a crossing but the system does not include it in the report selection. SA-Implement a 3 pager report button in the inventory screen. RM-two approaches: direct user to reports page and pass parameter or have button on inventory screen that displays the data in viewer. Drop per conversation with TS & SA 9/2/09. SA will check if this is still needed. GT-change to allow printing of the Crystal report from the inventory screen. SA-wish to have embedded 'print' button to allow the report to be printed from inside the application. Susan will review this enhancement request with the OFCVO project mgrs to see if this is still an issue. Users may really wish to print the 3 pager for a group of crossings (e.g. mp to mp). Solution Strategy: Modify screen
39	3-Low	Additional search parameters for Crashes	There should be a separate search page for crash data which would allow a search for corridor, county, Mn/DOT district, etc This should include the ability to show the crashes as hyperlinks so that the crash details can be viewed. TS- may be tied to #11 improve query capability. SA- add a "crash search page" rather than having to do all searches from the crossing crash results page. GT-this could be delivered as a report but would not have hyperlinks. Solution Strategy: RM-should be able to copy the search code to a search page, no change to database, no change to reports
46	3-Low	Entire Program is too slow	RGCIP end users experience slow downs during the day, which appears to be server related, not application related. Drop per conversation with TS & SA 9/2/09. SA-moved this in from the maintenance list 8/09. JIRA #39. Solution Strategy: To be determined
49	3-Low	Allow users (and the public) to view RGCIP inventory data and photos over the Internet	TS-This is related to Enhancement 62. TS- expand external users including the general public access to RGCIP (view only). SA-just allow access to crossing data, not project data. Includes: real estate brokers, cities, counties, etc. RM-changes may need to be done to allow external access to view but not log in. There may need to be changes in the security structure. Maybe a minor enhancement. TS-general public may not need access to live data. SA-could we restrict the type and number of reports easily? Solution Strategy: 2 alt's: #1 DR-Map Viewer is now accessible to the public. Suggests, let the public access data only through the Map Viewer. #2 RM-Access RGCIP alt, will need an additional security role & some infrastructure configuration. If security were restricted to the page level, the cost is low. SN-If reports are to be served up, would need to duplicate reports on an external server. Need to determine which reports if any, will be made available.
56	3-Low	Move the ability to invoke the	10/09 TS moved from med to low priority. This is currently a script that Peter Morey wrote. TS- 9/09 move to the minor enhancement list. SA-will check with GT to

		Green Sheet update process from a Web screen or Toad to the Utilities tab of RGCIP	see if this is still in. DR-#56 & 59 may be related. #56 seems to be a small effort to add a GS button to RGCIP or web page to kick it off. DP-add to the utilities tab? Contact person is George. Solution Strategy: DR-Have vendor add a button to invoke the green sheet. Assumes that there would be no changes to the green sheet.
61	**3-Low**	Streamline the RGCIP functionality so that a DBA is not required for as many changes	TS-There are instances in the use of RGCIP where a user cannot undo an action or edit, such as inactivating a crossing or changing a phone number, duplicate record created. TS-OFCVO will need to have the users identify specific areas in which the rules need to be relaxed. Solution Strategy: TS-Would need to determine the features that could have the security relaxed, check the number of magic tickets by category. Grant users rights to perform some of the actions. This estimate is based on 12 instances, some of which may require programming.